# ECLER

# PLAYER ZERO

AUDIO PLAYER

*Local and Streaming Audio Player*

# USER MANUAL

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# 1. PRECAUTIONS

## 1.1 IMPORTANT REMARK

**CAUTION**
RISK OF ELECTRIC SHOCK
DO NOT OPEN

**WARNING: SHOCK HAZARD - DO NOT OPEN**
**AVIS: RISQUE DE CHOC ÉLECTRIQUE - NE PAS OUVRIR**

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

**WARNING (If applicable):** The terminals marked with symbol of " ⚡ " may be of sufficient magnitude to constitute a risk of electric shock. The external wiring connected to the terminals requires installation by an instructed person or the use of ready-made leads or cords.

**WARNING:** To prevent fire or shock hazard, do not expose this equipment to rain or moisture.

**WARNING:** A device with Class I construction shall be connected to a mains socket-outlet with a protective earthing connection.

**WARNING:** This product must not be discarded, under any circumstance, as unsorted urban waste. Take to the nearest electrical and electronic waste treatment centre.

**This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules**. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

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## 1.2 IMPORTANT SAFETY INSTRUCTIONS

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this device near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other device (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at the plugs, convenience receptacles, and at the point where they exit from the device.
11. Only use attachments/accessories specified by the manufacturer.
12. Unplug the device during lightening sorts or when unused for long periods of time.
13. Refer all servicing to qualified personnel. Servicing is required when the device has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the device, the device has been exposed to rain or moisture, does not operate normally, or has been dropped.
14. Disconnecting from mains: When switching off the POWER switch, all the functions and light indicators of the unit will be stopped, but fully disconnecting the device from mains is done by unplugging the power cable from the mains input socket. For this reason, it always shall remain easily accessible.
15. Equipment is connected to a socket-outlet with earthing connection by means of a power cord.
16. The marking information is located at the bottom of the unit.
17. The device shall not be exposed to dripping or splashing and that no objects filled with liquids, such as vases, shall be placed on device.

## 1.3 CLEANING

⚠️ **Clean the unit with a soft, dry clean cloth or slightly wet with water and neutral liquid soap only, then dry it with a clean cloth. Be careful that water never gets into the unit through any hole. Never use alcohol, benzine, solvents or abrasive substances to clean this unit.**

**NEEC AUDIO BARCELONA, S.L.** accepts no liability for any damage that may be caused to people, animal, or objects due to failure to comply with the warnings above.

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**Thank you for choosing our device Ecler PLAYER ZERO!**
**We appreciate your trust.**

It is **VERY IMPORTANT** to carefully read this manual and to fully understand its contents before any connection in order to maximize your use and get the best performance from this equipment.

To ensure optimal operation of this device, we strongly recommend that its maintenance be carried out by our authorised Technical Services.

**All ECLER products are covered by warranty**, please refer to www.ecler.com or the warranty card included with this product for the period of validity and conditions.

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## 2. FEATURES

**PLAYER ZERO** is a compact stereo audio player able to play music content from local storage devices (USB/MICRO SD), Internet streaming services (online radios, etc.) and digital media exchange (DLNA, AirPlay) with the following main features.

### 2.1 MAIN FEATURES

- 1 unbalanced stereo audio output, RCA connector and mini-jack (with stereo/mono selection).
- Compatible with mp3, ogg, WAV, AIFF and FLAC audio formats.
- One USB port and one MICRO SD card slot for access to local media content.
- Ethernet interface with RJ45 connector for communication with web setup application as well as Internet streaming reception.
- Wi-Fi interface (client or master mode) for communication with web application conFiguretion as well as Internet streaming reception.
- Fully conFigureble through web application (point-to-point or through the same LAN)
- 2 GPI (General Purpose Inputs) ports, to trigger the 2 available events.
- Silence detection event.
- Internal clock with up to 240h autonomy (without AC adapter) and automatic synchronization with NTP services.
- **Modular firmware**: PLAYER ZERO has a firmware with modular services that allow each user to personalize its operation and adapt it to the size of his project or to his business model. The firmware includes, among other functions and services:

- o Calendar event triggering
- o Synchronization of cloud content (Cloud Disk Sync): Store & Forward (rsync).
- o Execution of scripts (user-written instruction files in lua language - www.lua.org).
- o Local file encryption (USB/MICRO SD).
- o Activity Log.

⚠️ **PLAYER ZERO programming is done through the web application embedded in the unit.** Refer to the PLAYER ONE & PLAYER ZERO web GUI application manual for more information.

## 3. INSTALL & CONNECT

### 3.1 LOCATION, SET UP AND VENTILATION

The PLAYER ZERO has been **specially designed to be used both as a desktop player and a 19" rackmount unit**, occupying third a rack space (with VEO-RACK19, optional mounting kit for standard rack cabinets).

In professional installations, it **should preferably be placed in the same rack as the audio sources**.

Since its **power consumption is very low, forced ventilation is not necessary. However, avoid exposing the device to extreme temperature and the environment in which it is placed should be as dry and clean (no dust) as possible.**

### 3.2 AC CONNECTION AND POWERING ON

PLAYER ZERO is powered by alternating current (AC) through its external power supply: 100-240 VAC, 50-60 Hz. This external power supply has several interchangeable connectors: American, European, British and Chinese.

The operating environment should be dry and be totally free of dust. Do not expose the unit to dripping or splashing. Do not place incandescent objects like candles on top of it.

If the unit requires any intervention and/or connection/disconnection, it must be powered off first. There are no user-serviceable parts within the unit. To avoid buzzing, do not allow the power cable to intertwine with audio shielded cables.

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## 3.3  AUDIO OUTPUT CONNECTIONS

PLAYER ZERO has 1 unbalanced stereo output on its rear panel.

The signal output connectors are 2 x RCA and 1 x stereo mini-jack.

## 3.4  ETHERNET PORT FOR CONFIGURETION AND INTERNET CONNECTION

An RJ-45 connector allows the unit to be connected to an Ethernet network or even directly (point-to-point) to a computer.

This connection provides access to Internet contents, and to the conFiguretion of the unit using a web browser on the computer, which points to the IP address of the PLAYER ZERO, showing the web application embedded in the unit. Refer to the PLAYER ONE & PLAYER ZERO web GUI application manual for more information.

## 3.5  WI-FI INTERFACE FOR CONFIGURETION AND INTERNET CONNECTION

A Wi-Fi interface allows the unit to be connected to a Wi-Fi network or even directly (point-to-point) to a computer by Wi-Fi.

This connection provides access to Internet contents, and to the conFiguretion of the unit using a web browser on the computer, which points to the IP address of the PLAYER ZERO, showing the web application embedded in the unit. Refer to the PLAYER ONE & PLAYER ZERO web GUI application manual for more information.

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## 3.6 GPI REMOTE CONTROL PORTS

PLAYER ZERO has 2 GPI control inputs on its rear panel. These inputs can be connected to an external physical device (e.g. a contact closure) and associated with an PLAYER ZERO function:

- Load and play previously configured audio content
- Preset recall
- Audio playback with priority over the music program
- Transport bar control (PLAY/PAUSE, STOP, etc.)
- Internal triggering, to interact with other player services (scripts for example)

GPI connectors use 3-position screw terminal blocks (Euroblocks). The wiring is as follows:

GPI terminal    >    – 1, 2 terminals
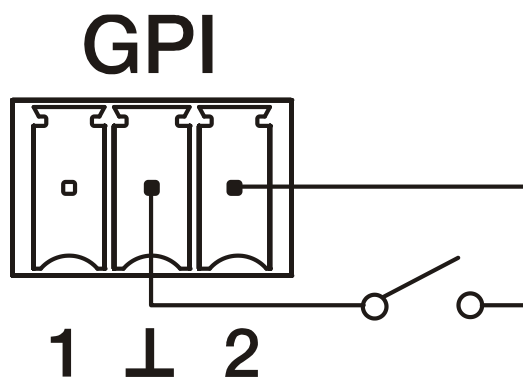
Ground         >    ⊥ terminal



Figure 1: Connection example of GPI 2

💡 **Connecting cables can be up to 500 meters long** with a minimum section of 0,5 mm$^2$.

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## 4.  START-UP and OPERATION

Ecler recommends **configuring PLAYER ZERO with your web application to enjoy its full functionality**. Please refer to the [PLAYER ONE & PLAYER ZERO web GUI application manual](#) to know all the functionality it offers.

**Plug the power cord into the back of the device to turn it on**.

### 4.1  RESTORE DEFAULT / FIRMWARE UPDATE

PLAYER ZERO has two functionalities that can be be done via the FD/FS button on the rear panel:
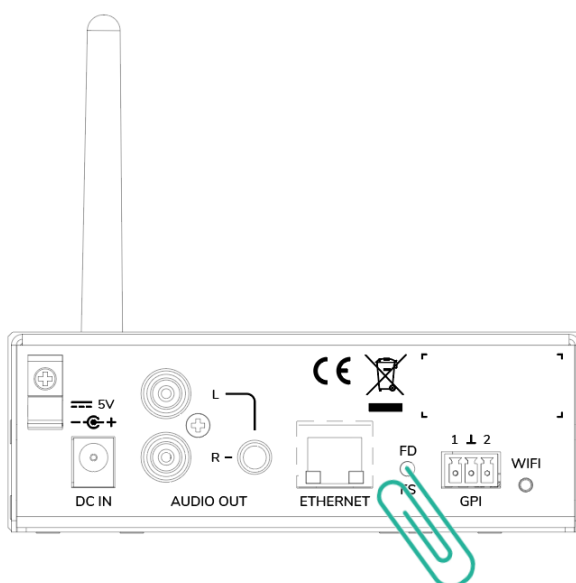


- **Restore Factory Defaults:** Restore factory settings. Press and hold the FD/FS button on the rear panel for 10 seconds with a small pin or paper clip while the unit is powered on.

- **Fail Safe (Restore firmware)**: Install the latest firmware published on the Ecler website or a firmware file hosted on one of the local storage systems (USB/MICRO SD).

  While the unit is unplugged, press and hold the FD/FS button with a small pin or paper clip and then plug in the unit. The front LEDs will start flashing rapidly for 3 seconds (at this point the FD/FS button can be released).

⚠ **To restore the latest released firmware, it is necessary to connect the device to a DHCP server with Internet access**, to download the firmware.

If this action is not performed correctly, you may lose all device settings and parameters. **Be sure to save a backup copy of the device settings before executing this action.**

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## 5.   PANEL FUNCTIONS

### 5.1  FRONT PANEL



1.   **ON LED**: power indicator.
2.   **SP LED**: signal present indicator.
3.   **NET LED**: network traffic indicator.
4.   **SD LED**: Micro SD source operation indicator.

5.   **MICRO SD/MICRO SDHC slot**: for local audio content playback. Up to 2TB. FAT16/32 format.
6.   **USB 2.0 port:** for local audio content playback. Up to 2TB. FAT16/32 and NTFS format.
7.   **WiFi Antenna.**

### 5.2  REAR PANEL



8.   Security flange for power supply cable
9.   External power supply connector
10.  2 x RCA stereo output

11.  Stereo mini-jack output
12.  RJ-45 connector
13.  Factory Default / Fail Safe button
14.  GPI Port
15.  Indicator Light, WIFI

# 6. TECHNICAL DATA

## 6.1 TECHNICAL SPECIFICATIONS

PLAYER ZERO

| DIGITAL ENGINE | |
|---|---|
| **Processor** | MIPS Single Core 64bits 580MHz |
| AUDIO CONVERTERS | |
| **Sampling rate** | 48kHz |
| **Resolution** | 16bit |
| **Bit rate** | 32~320kbps |
| **Frequency response** | 5Hz - 24kHz (-3dB) |
| MEDIA PLAYER | |
| **Audio sources** | Local storage (USB & microSD), Internet radio, AirPlay, DLNA |
| **Dynamic range** | From -80 dB to 0 dB |
| **THD + Noise** | < 0.008% (1kHz, 1Vrms) |
| ANALOGUE AUDIO OUTPUTS | |
| **Number of outputs** | 2 x Stereo output (unbalanced) |
| **Connection type** | RCA estéreo, minijack 3,5mm |
| **Max output level** | 6dBV / 5k ohm |
| **Output impedance** | 460 ohm |
| **Dynamic range** | TBC |
| **Crosstalk** | TBC |
| CONNECTIVITY | |
| **Ethernet** | RJ45 10/100Mbps |
| **Wi-Fi** | 2.4GHz Wi-Fi, 802.11 b/g/n |
| **Wi-Fi antenna** | Front panel |
| **Programing and control** | Web Application, RePLayer & Gallery. Third party integration: JSON |
| REMOTE CONTROL CONNECTIONS | |
| **GPIs** | 2 ports, Dry contact to ground, 3 pin Terminal block |

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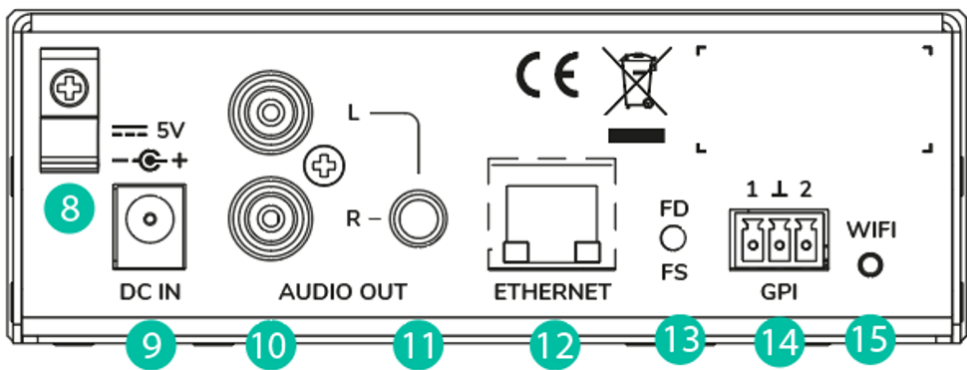REAL-TIME CLOCK

| | |
|---|---|
| **Retention time** | 240 hours aprox. |
| **Accuracy** | ±1 minute / month |

MONITORING AND CONTROL

| | |
|---|---|
| **Display** | No |
| **LED indicators** | Front panel: NET, SP, SD, Power<br><br>Rear panel: Wifi |
| **Buttons** | Rear panel: Factoty Defaults / Fail Safe (pin-hole) |

LOCAL STORAGE

| | |
|---|---|
| **Micro SD** | Front panel micro SD slot<br>Supports micro SD SDXC |
| **USB** | Front panel USB female connector<br>Support USB 2.0 High Speed (480 Mbps) |
| **Capacity** | Up to 2TB |
| **File system** | Supports FAT16, FAT 32, VFAT and NTFS (read-only)<br>Multi-partition up to 1 |
| **Playable audio files** | mp3, ogg, WAV, FLAC, AIFF, m3u, pls |
| **Files analysis** | 65354 playable folders<br>65354 playable folders within each folder<br>65354 playable files within each folder |
| **Folder hierarchy** | Up to 8 containing the root directory |
| **Sorting** | UNICODE<br>Up to 100 folders, 100 files by folder<br>(Folders/files over 100 sorted in the FAT order) |

ELECTRICAL

| | |
|---|---|
| **Power supply** | External, universal, 5VDC (included) |
| **AC mains requirement** | 90-264VCA 50-60Hz |
| **AC mains connector** | International AC plugs set |
| **Power consumption** | 4.5 VA / 2.2 W |
| **Ventilation** | Passive |

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| PHYSICAL | |
|---|---|
| **Operating temperature** | Min 0°C, +32°F<br>Max +35°C, +95°F |
| **Operating humidity** | < 85% HR |
| **Storage temperature** | Min -10°C, +14°F<br>Max +50°C, +122°F |
| **Storage humidity** | < 90% HR |
| **Installation options** | Desktop, rack (1/3 of 1UR) |
| **Included accessories** | AD/DC Power Supply, WiFi antenna, adhesive rubber feet, rack tray screws , GPI connector, warranty card and standard user guide |
| **Optional accessories** | VEO-RACK19 Compatible |
| **Dimensions (WxHxD)** | 126.5 x 44 x 132 mm / 4.98" x 1.73" x 5.19" |
| **Weight** | 0.6 Kg / 1.32 lb |
| **Shipping dimensions** | 450 x 220 x 60 mm / 17.71" x 8.66" x 2.36" |
| **Shipping weight** | 0.8 Kg / 1.76 lb |

## 6.2 MECHANICAL DIAGRAM

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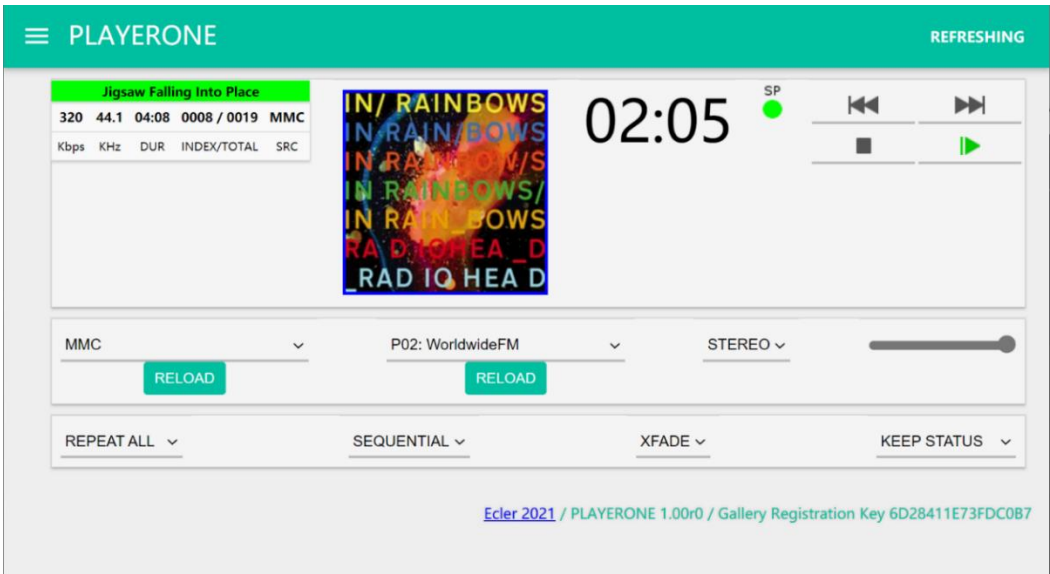
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# PLAYER ONE / PLAYER ZERO – Web GUI (v1.00r0)

AUDIO PLAYERS

*Streaming and local media audio player*



# USER MANUAL

# 7. Web GUI (v1.00r0)

**PLAYER ONE / PLAYER ZERO has a web application, embedded in the device itself, that allows you to configure it. It is not necessary to install any additional software.** With this application, you can configure the device's advanced options, create playlists, schedule calendar events, create scripts or control basic functions remotely. The application can be accessed in a web browser from any device that is connected to the same local network, via Ethernet (wired) or WiFi.

## 7.1 FIRST STEPS

In order for the device to access the PLAYER ONE / PLAYER ZERO web application, **it must be connected to the network, either via a cable (RJ-45 connector) or wirelessly (WiFi).**

- **Wired (Ethernet connection):** By default, PLAYER ONE / PLAYER ZERO is set to DHCP mode. It will be assigned an IP address automatically.
    - o Make sure that the static IP network parameters are compatible with your local network and the existing IP range of the system.
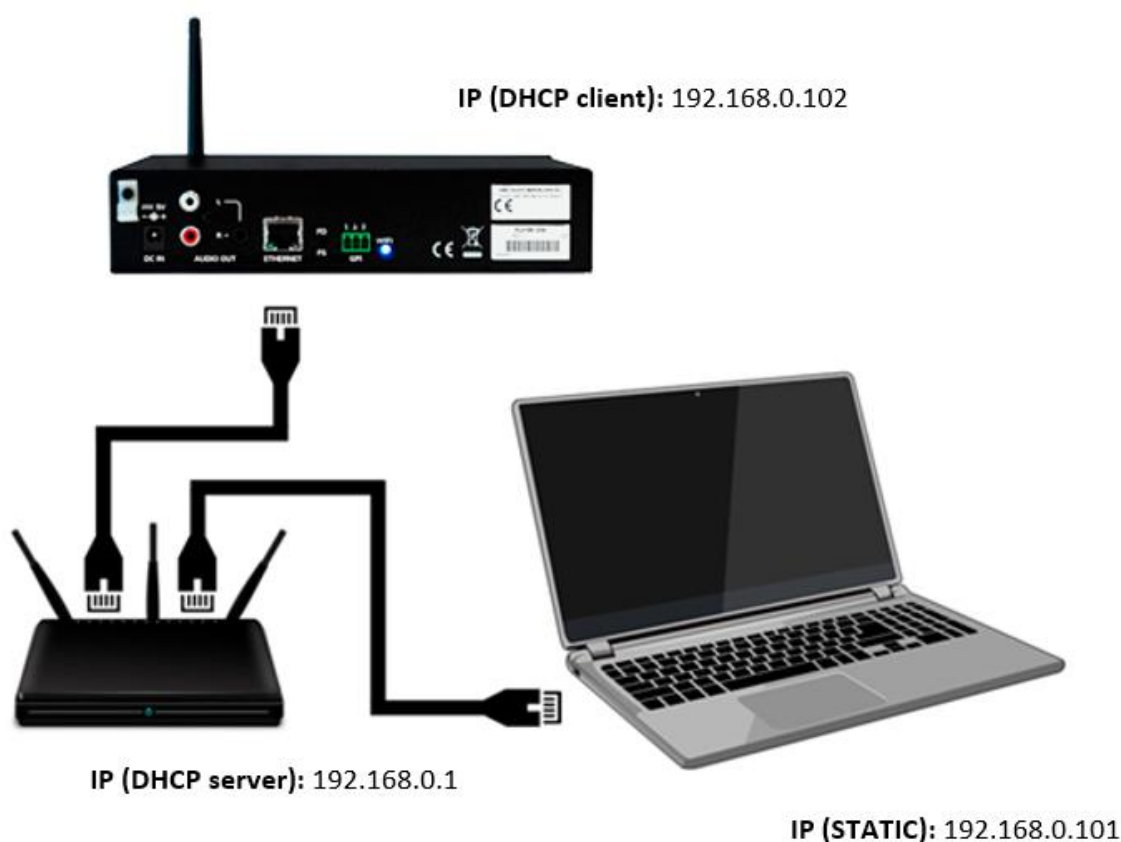


Figure 2: example of connection to a local network via the Ethernet network interface (wired)

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- **WiFi**: PLAYER ONE / PLAYER ZERO has a WiFi network interface, which means that mobile devices can stream audio to the device. It can be configured wirelessly. There **two modes of operation**:

  o **MASTER mode**: point-to-point connection. The device's WiFi network interface is set to this mode by default. Connect your WiFi device (computer, smartphone, etc.) as a client of the device via your WiFi network wizard (connect to the PLAYER-WIFI network, default SSID). The default password is: 0123456789.

    *Please Note:* in this operating mode, no Internet connection is available. However, it will be useful when opening the web application for the first time and configuring the network parameters according to your needs.

  o **CLIENT mode:** this connection mode allows the device to connect to your preferred WiFi network. Mobile devices must then be connected to the same network in order to be able to configure PLAYER ONE / PLAYER ZERO. If your WiFi network has an Internet connection, both PLAYER ONE / PLAYER ZERO and the mobile devices will have Internet access.
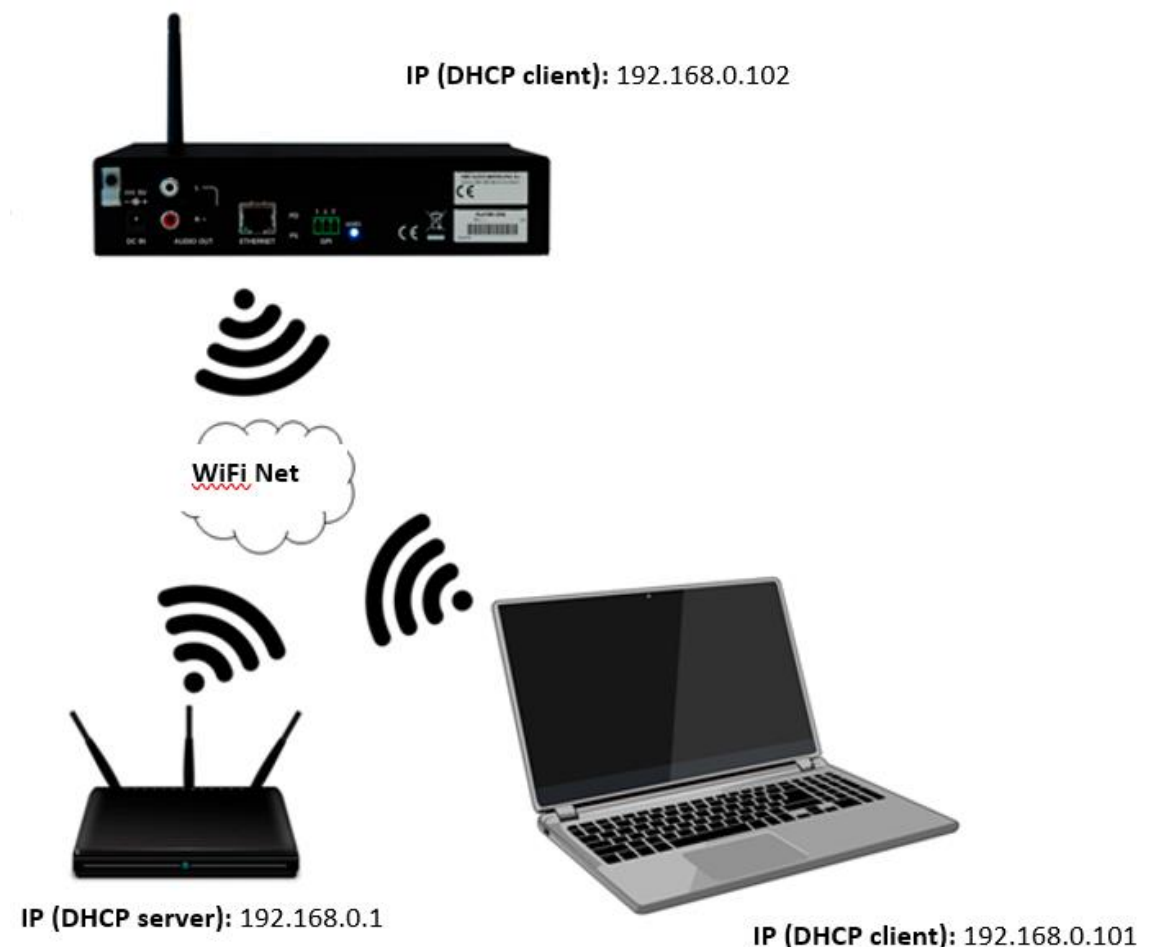


Figure 3: example of connection to a local network via WiFi network interface (wireless)

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PLAYER ONE / PLAYER ZERO devices use the mDNS service so that they can be accessed intuitively through a web browser on the same local area network (LAN). To access the web application easily, enter "devicename.local/" into the search bar of your browser. By default this is, "**playerone.local/**" for PLAYER ONE, "**playerzero.local/**" for PLAYER ZERO.
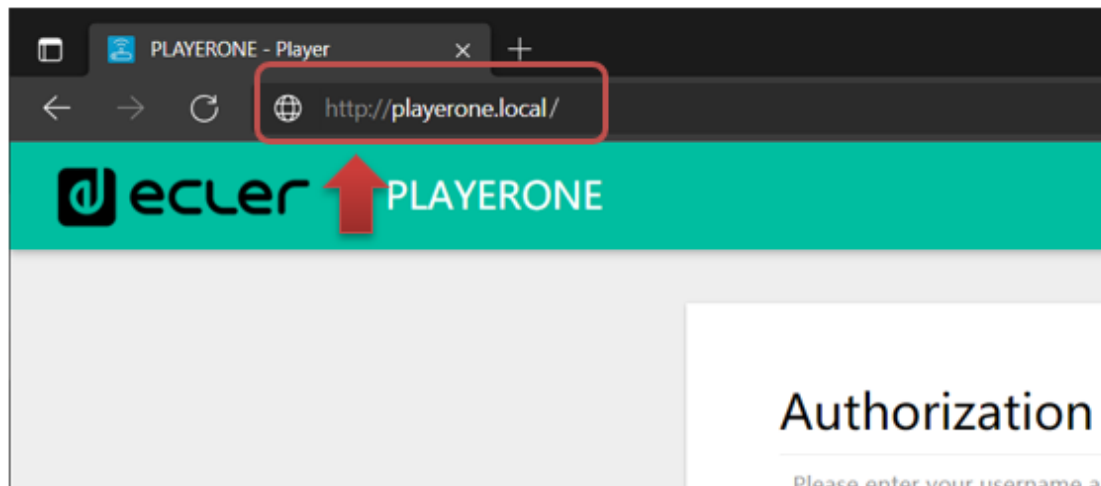


Figure 4: access via mDNS service

If you prefer (or if the mDNS service is not available), you can also access the device using the IP assigned to the PLAYER ONE / PLAYER ZERO:

- **PLAYER ONE**:
  - o Press and hold the MENU button for a few seconds until the conFiguretion menu appears.
  - o Navigate by pressing the NEXT button, until the display shows WIFI or ETHERNET, depending on the chosen connection.
  - o Press the rotary encoder (SELECT)

- **PLAYER ZERO**:
  As there is no screen to show you the IP, you need to find it on the web GUI of the DHCP server (Switch/Router). Refer to the manufacturer's documentation.



Figure 5: web GUI Router example

Type the IP address of the device into the navigation bar of your browser (the IP shown in Figure 15 does not have to match the one assigned to your device).

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You will see the welcome screen. To access the application, the *username* and *password* are as follows (preset):

- **Username**: root
- **Password**: ecler
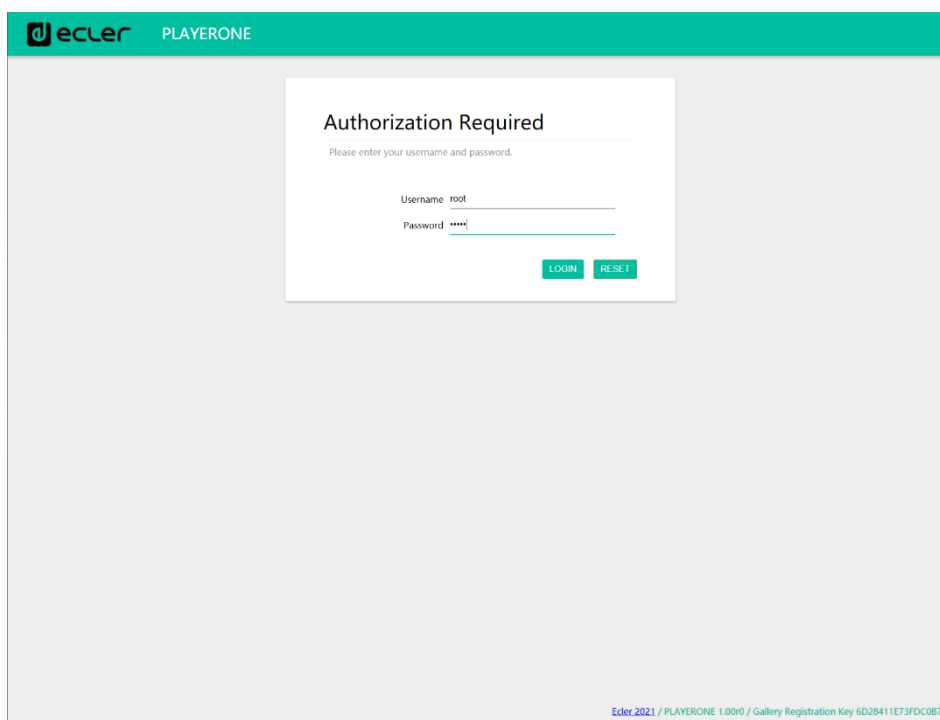


Figure 6: web application welcome page

### 7.1.1    QUICK GUIDE FOR ETHERNET CONNECTION

1. Connect the PLAYER ONE / PLAYER ZERO to a switch/router via the Ethernet interface (wired).
2. Connect the computer/smart device to the same network.
3. Enter "playerone.local/" for PLAYER ONE, or "playerzero.local/" for PLAYER ZERO, into your browser.

### 7.1.2    QUICK GUIDE FOR WIFI CONNECTION

1. Connect the computer/smart device to the PLAYER-WIFI network. Password: 0123456789
2. Enter "playerone.local/" for PLAYER ONE, or "playerzero.local/" for PLAYER ZERO, into your browser.

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## 7.2 DEVICE

### 7.2.1 PLAYER

This page in the PLAYER ONE / PLAYER ZERO menu displays information about playback, *streaming tags* and detailed information about the audio content, and in addition, it shows the album art. It also allows basic functions to be controlled remotely, such as PLAY/PAUSE, STOP, PREV and NEXT; source selection and user presets; repeat, play, and fade modes; channels (stereo/mono), volume control; and reset mode. There is useful information at the bottom of the page as well, such as the firmware version and the Ecler Gallery registration key.
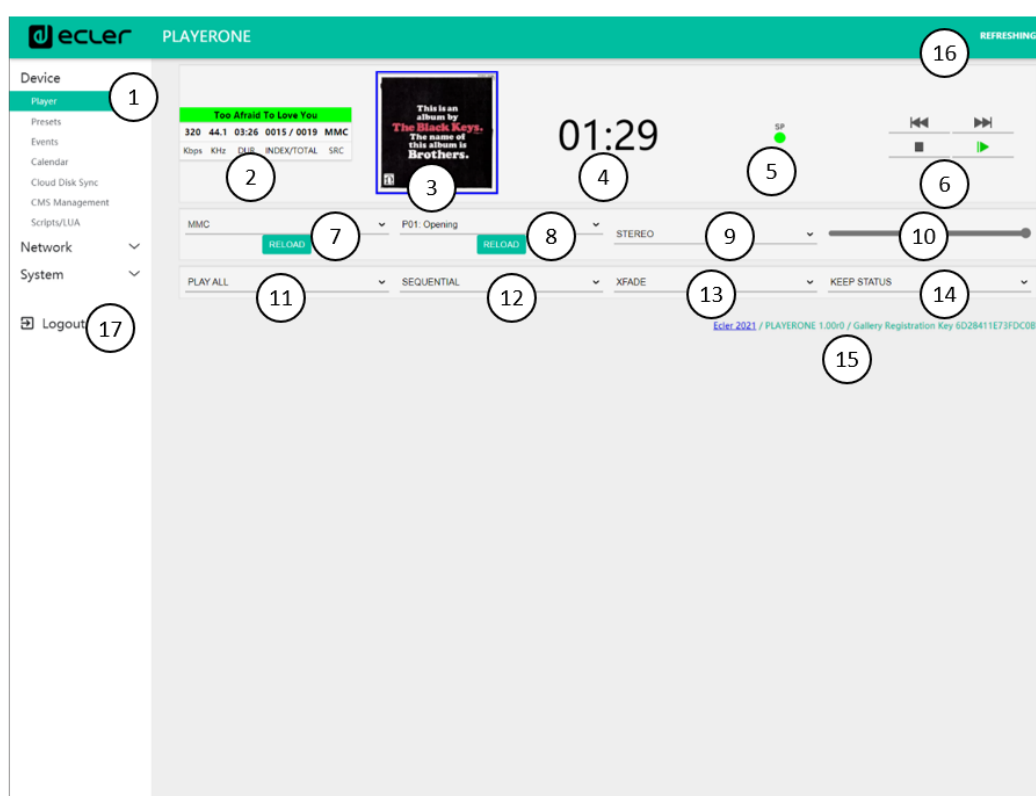


Figure 7: player page (Player)

1. **Navigation menu**: displays the web application's different navigation menus and submenus.
2. **Streaming information**: displays information about the stream or the audio file (depending on the way it is configured). If this information is not available, the default value is displayed, which is the URL.
   - o ID3 Tags: title, artist, album, etc.
   - o Kbps: bit rate/s
   - o KHz: sampling frequency
   - o DUR: duration
   - o INDEX/TOTAL: index or position within all the files
   - o SRC: source (USB, MMC, NET, etc.)

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3. **Album art**: displays the album art for the file. For the album art to be correctly displayed, the device needs to have an Internet connection. If the album art cannot be displayed, it will show a default image.

4. **Playback time**: time elapsed since the start of playback of the URL or audio file.

5. **Signal presence**: this will be green if the device has an audio signal at its output. If the device is not playing any audio, or if the volume level is too low, or the device is muted, it will be grey. This virtual LED will be the same colour as the SP LED on the front of the device. It is useful for dealing with issues when there is no audio signal.

6. **Playback controls**: allow the device's playback controls to be operated remotely: PREV, NEXT, STOP, PLAY/PAUSE.

   *Please Note*: PLAYER ZERO has no playback controls on the front panel.

7. **Sources**: allows one of the available sources to be selected. The RELOAD button allows the current source to be reloaded.

8. **Presets**: allows one of the available presets to be selected. The RELOAD button allows the current preset to be reloaded. If changes are made to the current preset, a reload is required in order for the changes to be applied.

9. **Stereo-mono**: selection of stereo output (left and right channels) or mono output (same signal on left and right channel).

10. **Volume**: allows the volume to be controlled remotely.

    *Please Note*: PLAYER ZERO does not have a volume control on the front panel.

11. **Repeat mode**:

    o PLAY ALL: Plays through the entire playlist once.

    o PLAY ONE: Only plays the first item in the playlist.

    o REPEAT ALL: Repeats the entire playlist on a loop.

    o REPEAT ONE: Only repeats the first item in the playlist.

12. **Play mode**:

    o SEQUENTIAL: Plays through the entire playlist in alphanumeric order.

    o RANDOM: plays through the entire playlist in pseudo-random order.

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13. **Transition mode**, for transitions between audio files:

   o XFADE: The file that is playing fades out at the end of playback, as the next file increases in volume. There is a smooth transition between files (approx. 5 sec.). There is some overlap between tracks.

   o FADE: The file that is playing fades out at the end of playback (approx. 2.5 sec.). There is a smooth transition between files. There is no overlap between tracks.

   o OFF: deactivated. There is an abrupt transition between files. There is no attenuation or overlap between audio files.



+
VOL
–
XFADE          FADE                OFF
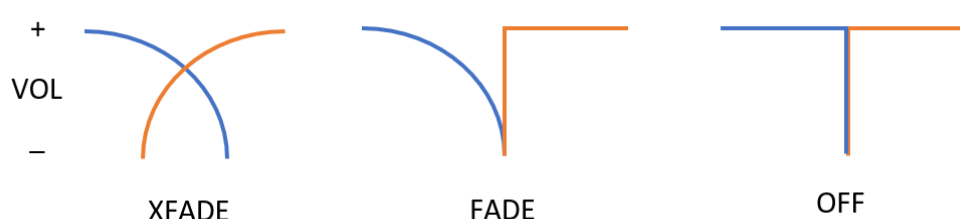
*PLEASE NOTE*: if the playback file is short (2-3 sec. tone, for example) and XFADE transition mode is used together with REPEAT ONE/ALL repeat mode, special attention must be paid to the playback times of the files, and the transitions. This may cause unexpected behaviour.

14. **Reset mode**:

   o KEEP STATUS: when the device is reset, the playback status will be maintained: source, preset, playback (PLAY, STOP, etc.) repeat mode, etc.

   o LOAD PRESET 1: when the device is reset, it automatically loads preset 1.

15. **Information**: this displays the following relevant information:

   o Year of development

   o Device firmware version

   o Ecler Gallery platform registration key

16. **Screen refresh**: allows the screen refresh to be paused (SP, playback time, file information, etc.). It also shows the number of changes made to a conFiguretion before it is saved.

17. **Logout**: this logs you out of the web application. You will be redirected to the welcome screen.

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## 7.2.2 PRESETS

PLAYER ONE/ PLAYER ZERO allows up to 20 presets or user conFiguretion memories to be created. If you recall a *preset* stored in the device at a later date, it will recall all the settings that are stored in that preset.
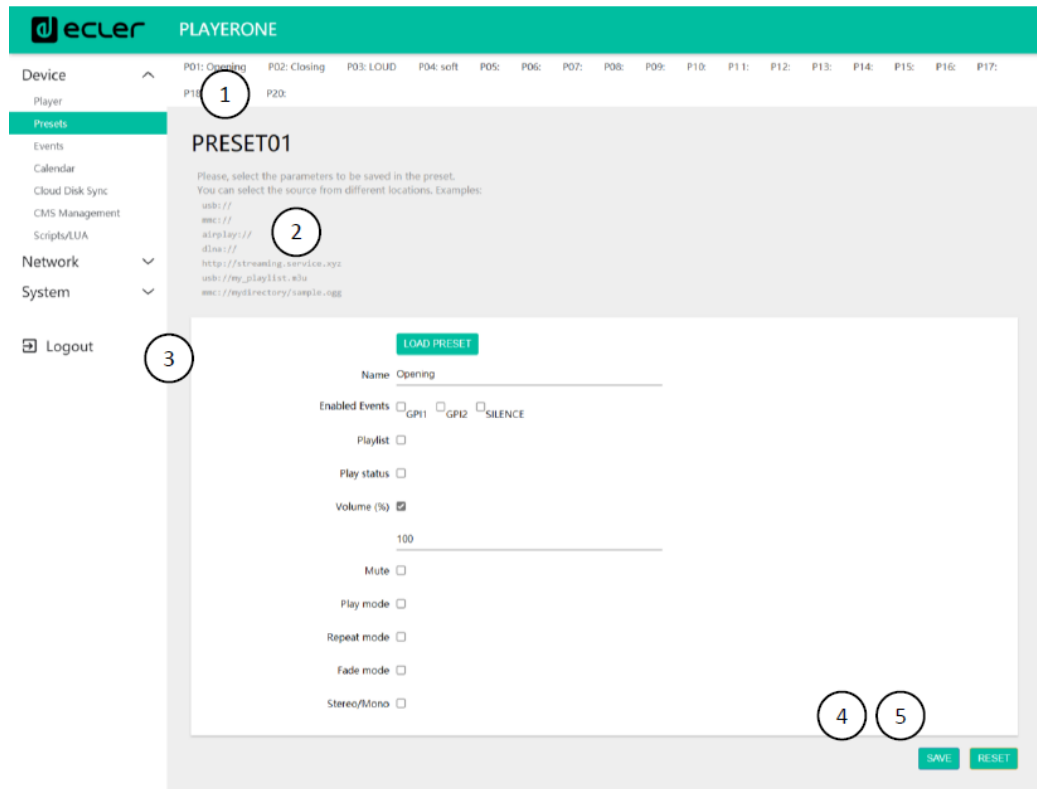
Figure 8: Preset conFiguretion example

1. **Page header**: this will show the 20 *presets*. Their default names are: P01, P02...P20. When you click on the name, it will display the conFiguretion for that *preset*. The names that appear for the *presets* can be edited within the preset conFiguretion. After this setting is saved in the preset, you need to refresh the browser page (F5) in order to display the changes in the header.

2. **Information**: displays useful information for configuring the presets.

3. **ConFiguretion options** for the selected preset.

4. **Save button**: saves the settings made to the *preset* that is being edited.

5. **Reset button**: resets the changes made to the last conFiguretion that was saved in the *preset* that is being edited.

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1. **Load Preset button**: loads the selected preset. This is useful as you can load the preset right after editing it, without having to change pages or handle the device.

2. **Name**: name of the preset. This is the name that will be displayed on the PLAYER ONE main menu/PRESETS (LCD screen), in the preset list on the Player page, in the Presets page header, and in the RePlayer application.

   *Please Note:* PLAYER ZERO does not have an LCD screen.

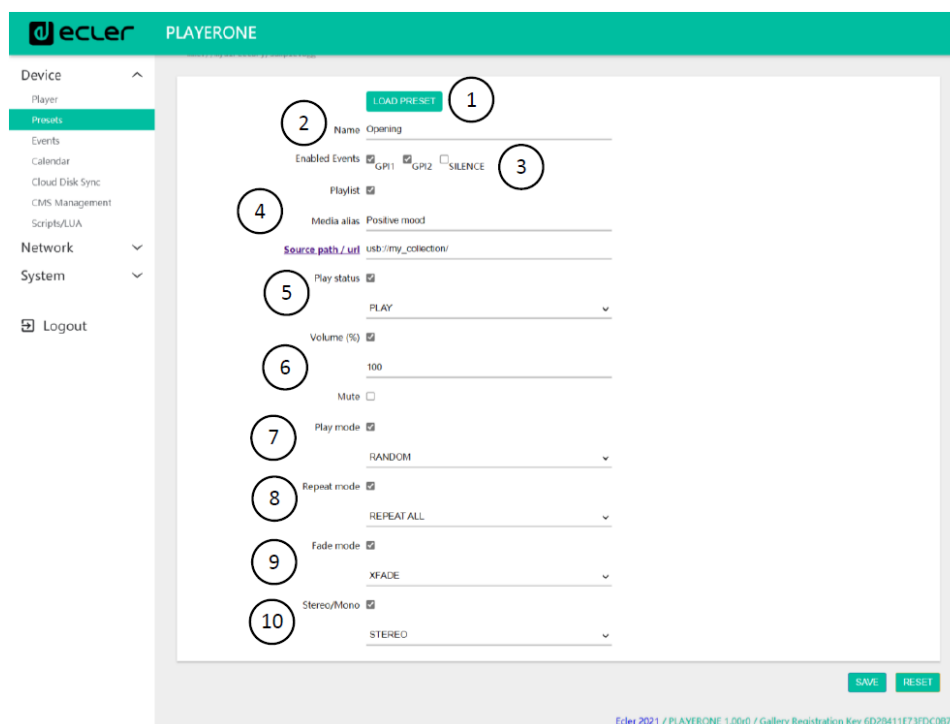3. **Enabled Events**: enables/disables events triggered by GPIs (General Purpose Input) and the silence detection event in the preset. The GPIs and the silence detection event must be configured on the Events page. See chapter [Events](#) for more information.

   Please Note: for the GPI event to work correctly it must be configured and enabled in the preset, and the preset must be loaded. If a preset is loaded when the GPIs are disabled, the GPIs will not work.

4. **Playlist:** if this option is enabled, when the preset is recalled, the playlist that is currently playing will be replaced by the source that is entered in the Source path/url field.

   o **Media alias:** alias of the source that is hosted in the preset (Source path/url). This alias will be displayed on the PLAYER ONE main menu/SOURCE (LCD screen) as an available source, in addition to the default sources (USB, SD, etc.). It will also allow you to directly access that media from any preset, from the Player page or the RePlayer application.

o **Source path/url:** this stores a network or local address in the preset. This address must be a valid address for the correct playback of audio content on the device. You can refer to the application prompts for entering local addresses (USB, SD, AirPlay, etc.). You can click on "Source path/url" (blue) to open the address that is entered in this field in a new browser tab. This option is available on several pages within the application. It is useful for checking that an audio source (Internet radio, for example) is functioning correctly, or for copying the address to create playlists (.m3u file, for example). See technical information (datasheet) for audio and playlist formats that are supported by the player.

*Please Note*: Internet radios saved via the front panel of PLAYER ONE are stored in the Playlist field.

5. **Play status:** if this option is enabled, the status of the player will be overwritten when loading the preset.

6. **Volume (%) /MUTE**: if this option is enabled, the volume/MUTE of the player will be overwritten when loading the preset (in %).

7. **Play mode**: if this option is enabled, the play mode (sequential/random) will be overwritten.

8. **Repeat mode**: if this option is enabled, the repeat mode (play all, play one, repeat all or repeat one) will be overwritten.

9. **Fade mode**: if this option is enabled, the transition mode between tracks within a playlist (off/fade/cross-fade) will be overwritten.

10. **Stereo/Mono**: if this option is enabled, the mono or stereo output selection will be overwritten.

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## 7.2.2.1  EXAMPLES OF AUDIO SOURCES

*Please Note*: the addresses shown are **examples**, these Internet radio or local file addresses may not work on your player.

| Media Path | Media Location | Items included in the play queue (just valid audio media) |
|---|---|---|
| **usb://** | USB storage device, root folder | Media stored in the USB root folder and up to the third level of sub-folders in it |
| **mmc://** | SD card storage device, root folder | Media stored in the SD card root folder and up to the third level of sub-folders in it |
| **usb://musicfolder/jazz/** | USB storage device, \musicfolder\jazz folder | Media stored in the USB device \musicfolder\jazz folder and up to the third level of sub-folders in it |
| **mmc://musicfolder/jazz/** | SD card storage device, \musicfolder\jazz folder | Media stored in the SD card \musicfolder\jazz folder and up to the third level of sub-folders in it |
| **mmc://evacuation_message.mp3** | SD storage device, root folder | mp3 single file named **evacuation_message.mp3** |
| **usb://evacuation_message.mp3** | USB storage device, root folder | mp3 single file named **evacuation_message.mp3** |
| **usb://...path.../my_collection.m3u** **mmc://...path.../my_collection.m3u** | Defined by the m3u playlist file | Media pointed by **my_collection.m3u** playlist **...path...** is the folder path where the m3u file is located |
| **usb://...path.../my_songs.m3u8** **mmc://...path.../my_songs.m3u8** | Defined by the m3u8 playlist file | Media pointed by **my_songs.m3u8** playlist **...path...** is the folder path where the m3u8 file is located |
| **usb://...path.../best_of_rock.pls** **mmc://...path.../best_of_rock.pls** | Defined by the pls playlist file | Media pointed by **best_of_rock.pls** playlist **...path...** is the folder path where the pls file is located |
| **http://www.ecler.com/music/party_songs/party.m3u** | Defined by the m3u playlist file | Media pointed by **party.m3u** playlist, and located in a Internet url (corporate web, etc.) |
| **http://www.ecler.com/music/party_songs/party.pls** | Defined by the pls playlist file | Media pointed by **party.pls** playlist, and located in a Internet url (corporate web, etc.) |
| **http://65.60.19.42:8040/** | Real-time streaming | Media served by an Internet audio streaming service with url **http://nnn.nnn.nnn.nnn:port** (in the example http://65.60.19.42:8040/) |
| **http://stream1.megarockradio.net:8240** | Real-time streaming | Media served by an Internet audio streaming service with url **http://url:port** |
| **http://208.92.53.90:443/LOS40_SC** | Real-time streaming | Media served by an Internet audio streaming service with url **http://url/folder** |
| **http://media_ musicradio.com/channel01.m3u** | Real-time streaming | Media served by an Internet audio streaming service, a playlist with url **http://url/playlist.m3u** |

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## 7.2.3    EVENTS

3 events are available: 2 of them are triggered by the GPI ports (by means of external, potential-free contact closures, which are connected to the GPI ports on the rear panel of the unit) and the other is triggered by silence detection. Both types of events can be configured on the Events page. By selecting the tab that corresponds to the event, you can access its conFiguretion.

***Please Note:*** bear in mind that, for the events to work correctly, they must be enabled in the *preset* currently in operation.
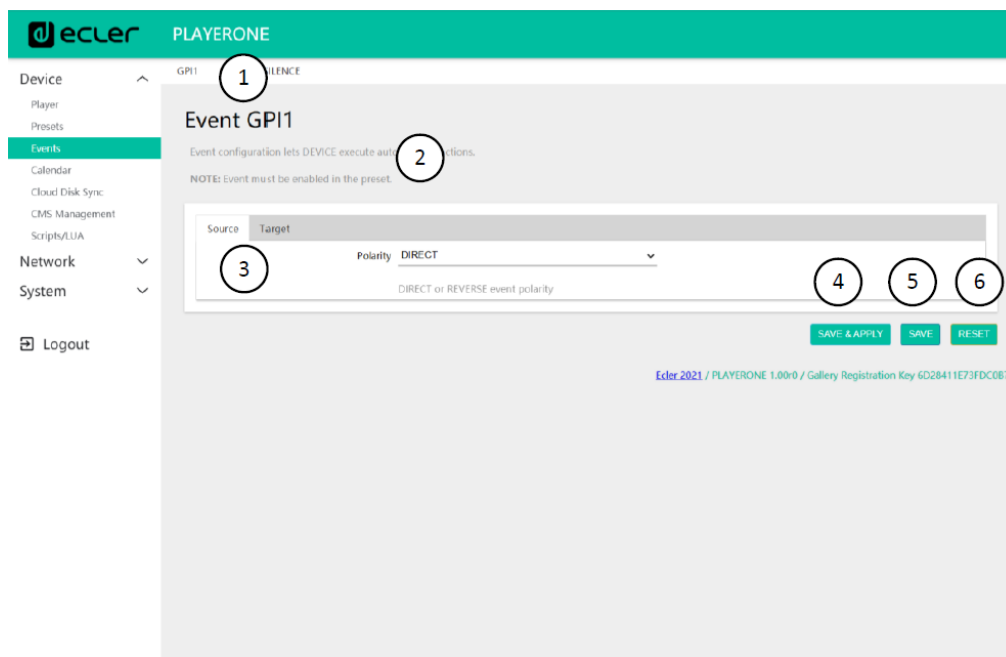


Figure 9: GPI event conFiguretion example

1. **Page header**: displays GPI and silence events. When you click on the name, it will display the conFiguretion for that event.

2. **Information**: displays useful information for configuring the events.

3. **ConFiguretion options** for the selected event.

4. **Save & Apply button**: saves the changes made to the GPI that is being edited and applies them. If the *preset* that is currently in operation has such an event enabled, it is not necessary to reload the *preset*.

5. **Save button**: saves the changes made to the GPI that is being edited without applying them. In this way, if the *preset* that is currently in operation has such an event enabled, the changes will only be applied when the *preset* is reloaded.

6. **Reset button**: resets the changes made to the last saved conFiguretion in the event that is being edited.

   ***Please Note***: you can configure the different tabs (Source, Target) before saving, and the changes are retained.

### 7.2.3.1 GPI EVENTS

There are 2 GPI events: GPI1 and GPI2. They can each be configured to trigger in different ways and perform independent actions.
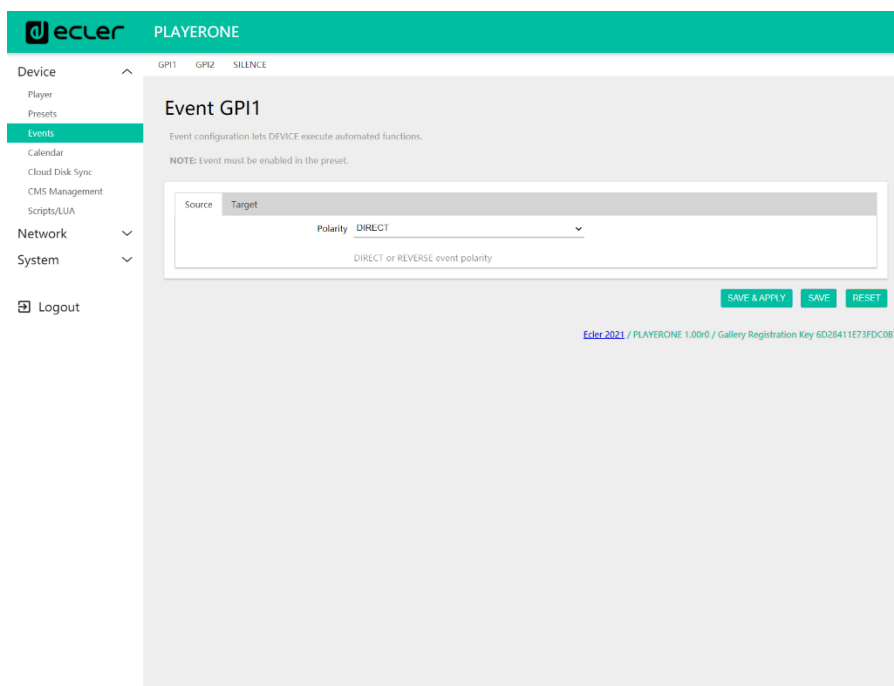


Figure 10: GPI conFiguretion, Source

- **Source**: source
  - ○ **Polarity**: polarity, direct or inverse; to define the trigger, by contact closure or contact release.
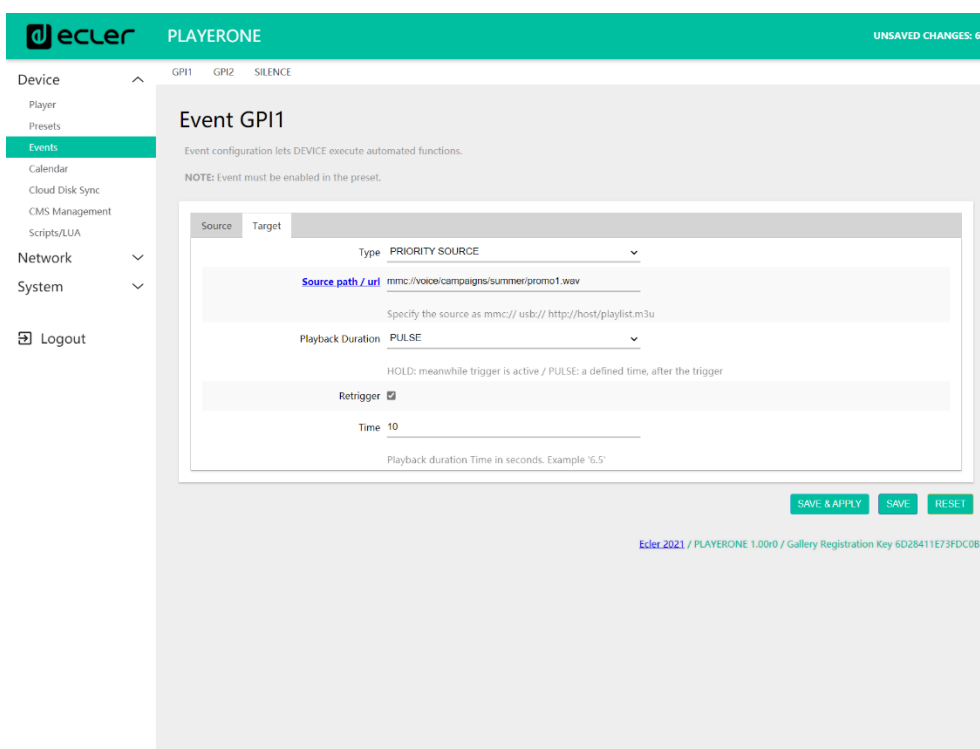


Figure 11: GPI conFiguretion, Target

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- **Target tab**: an action that the device will perform after GPI activation. There are several options or types of event (Type):
    - ○ **Interna**l: internal stimulus. This is useful for triggering actions within a Script.
    - ○ **Preset** recall: loading a preset. Select the preset you want to load with the GPI activation.
    - ○ **Transport control**: control of current playback, play/pause, play, stop, next, prev.
    - ○ **Load & Play Source**: loading and playback of a source. The source must be specified in the "Source path/url" field.
    - ○ **Priority Source:** playback of a source with priority over programmed audio. The source specified in the "Source path/url" field attenuates the source that is playing (programmed audio). When the priority audio ends, the programmed audio resumes playing, gradually returning to its previous volume.
        - ▪ If the **HOLD option** is selected, the source specified in the "Source path/url" field will be given priority WHILE the stimulus is held (GPI direct/reverse, as specified in the "Source" tab).
        - ▪ If the **PULSE option** is selected, the source specified in the "Source path/url" field will be prioritized for the time (in seconds) specified in the Time field. The Retrigger option allows the priority event to be re-triggered without waiting for it to finish and restarting the timer.

*Please Note*: a priority event can be useful for playing announcements, pre-recorded announcements, emergency announcements, etc. For more information on priorities see chapter [Regarding Priorities.](Regarding Priorities.)

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## 7.2.3.2 SILENCE DETECTION EVENT

PLAYER ONE/ PLAYER ZERO has a special event, the SILENCE detection event: absence of a real analogue audio signal at the unit's outputs. This allows the player to continue playing the media when the programmed audio that is being played ends, or is interrupted for any reason, which may sometimes happen due to certain problems that may arise (loss of Internet, accidental disconnection of the network cable, bad files, etc.): "*The show must go on*".
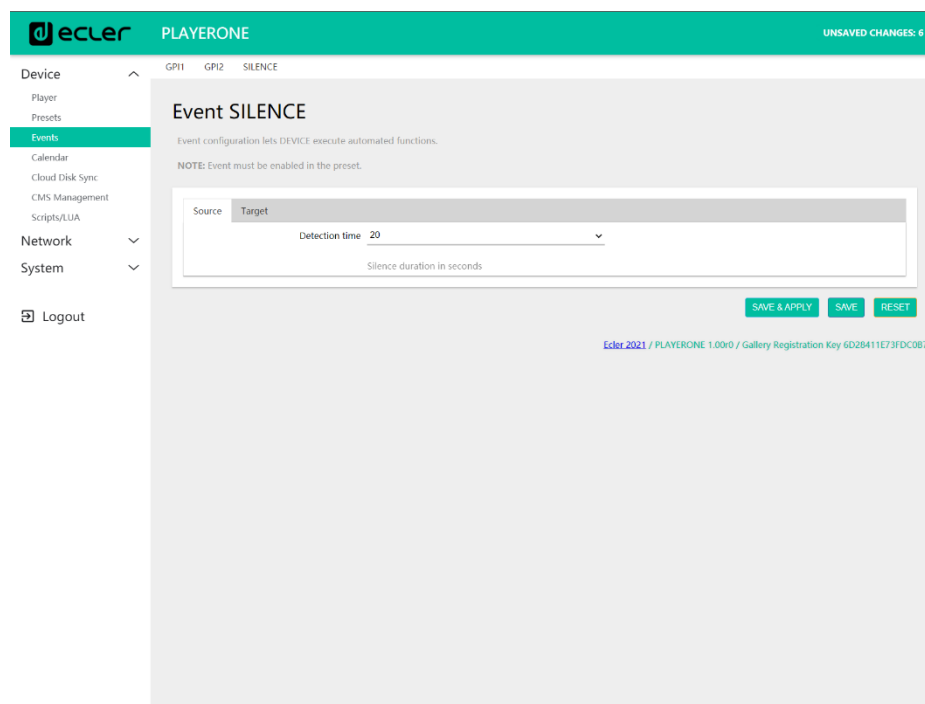
Figure 12: silence event conFiguretion

- **Source tab:** waiting time, or trigger threshold (detection time). Select the time allowed for silence (no audio signal) before the event is triggered.
- **Target tab**: select the action that PLAYER will perform when the specified waiting time has elapsed.
    - o **Internal**: internal stimulus. This is useful for triggering actions within a Script.
    - o **Preset recall:** loading a preset. Select the preset you want to load when the silence event is activated.
    - o **Load & Play Source**: loading and playback of a source. The source must be specified in the "Source path/url" field.

*Tip*: configure the uploading of local audio content (hosted on USB or uSD) as an action. This will ensure that you always have audio available, regardless of network connection issues that may occur outside of the player. Likewise, if you want to load a preset, ensure that the audio address stored in the selected preset is a local one (e.g. usb://) and that this preset has Play Status overwrite enabled, so that the PLAY option is selected. This will force the local medium to play, ensuring the continuity of the musical programme.

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## 7.2.4   CALENDAR

The *Calendar* page allows calendar-triggered events to be configured.

A calendar event performs a certain action, such as loading a message with priority, in accordance with conFigureble parameters: date, time, repetitions, etc.
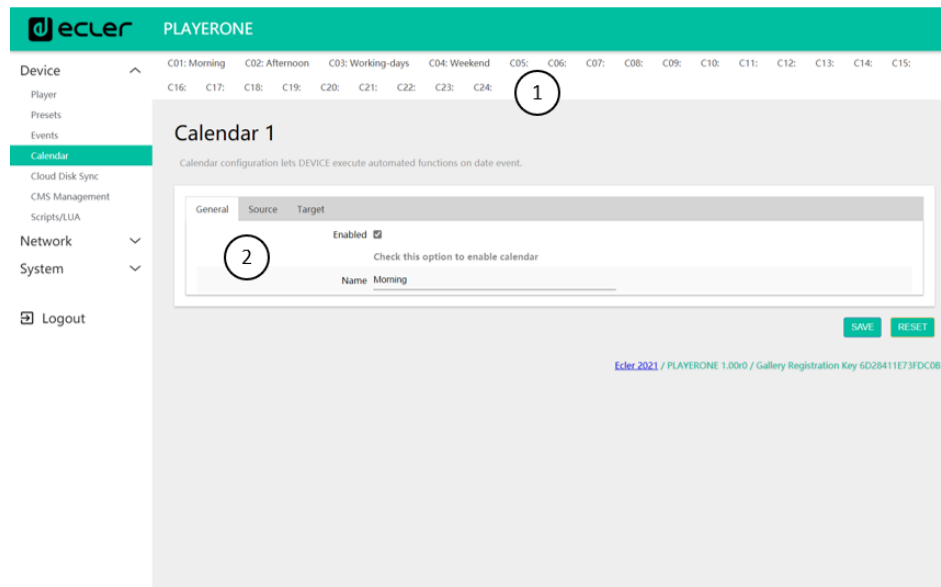


Figure 13: example of configuring a calendar event

1. PLAYER ONE/ PLAYER ZERO has **24 calendar events available**, each of which are fully conFigureble. The default names are: C01, C02…C24. When you click on the name, it will take you to the conFiguretion for that calendar event. The names that appear for the calendar events can be edited within the preset conFiguretion. After this setting is saved in the calendar event, you need to refresh the browser page (F5) in order to display the changes.

2. The conFigureble parameters of each calendar event are grouped into 3 tabs:

   o **General**: activation/deactivation of calendar events and their name

   o **Source**: start/end date, start/end time, and event repeat conditions

   o **Target**: action to be performed when the event is triggered

*Please Note:* before configuring calendar events, make sure that the time zone is set correctly: System/Name and time.
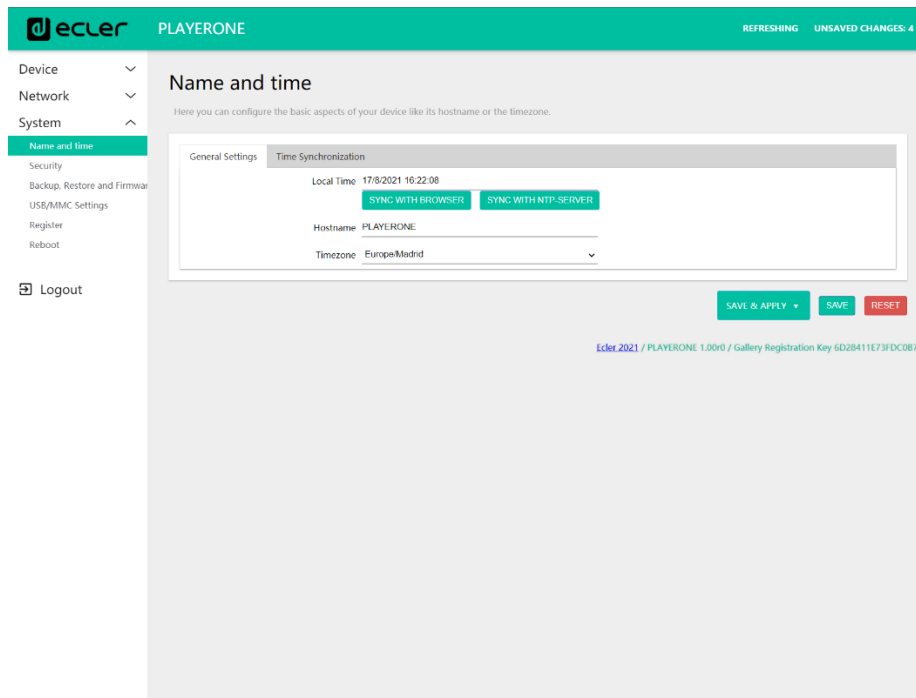
Figure 14: Name and Time conFiguretion
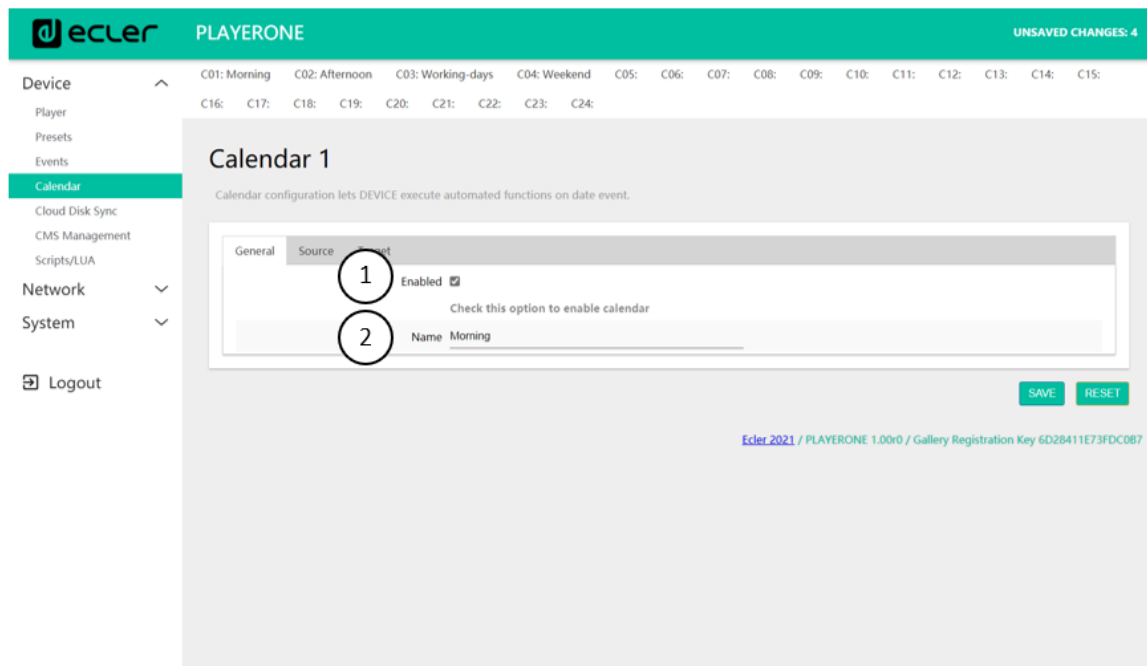
## 7.2.4.1  GENERAL



Figure 15: configuring a calendar, General

- **Enable**: allows you to enable or disable the calendar. If the calendar is enabled (ready for activation by dates/times), it will be enabled in all *presets*.

- **Name**: name of the calendar.

## 7.2.4.2   SOURCE

In the SOURCE tab, the parameters for the triggering time/date and event replay conditions are configured.



Figure 16: configuring a calendar, Source

## 7.2.4.3   DATE AND TIME INTERVAL

Defines the date and time when the event starts and the date and time when the event ends, if there is a specific end date and time.

- **Start date**: start date for the event. This field is not mandatory. If no specific date is selected ("dd/mm/yyyy"), the event will start on the same day as the changes are applied. If you select a date that is before the current date, the event will be valid as of the day the changes are applied.
- **Start time**: start time for the event. This field is mandatory. If there is a repeat condition, this will be the time at which the event is triggered for the first time each day.
- **Duration**: duration or validity of the calendar event. This allows calendar event duration settings to be selected.
  - ○ **FOREVER:** This option is selected by default. The calendar event will not have an end date.
  - ○ **CUSTOM END DATE**: end of the calendar event. This allows you to set the date and time when the calendar event will be triggered for the last time, regardless of repeat conditions.



Figure 17: interval example

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### 7.2.4.3.1  WEEKLY REPETITION

Weekly mask, or days of the week on which the calendar event will be repeated, at the time indicated in "Start Time".

For example, if you select Monday to Friday (weekdays), the configured event will not be triggered on Saturdays and Sundays (weekends).
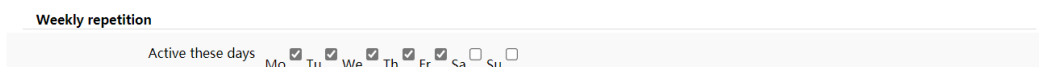
**Weekly repetition**

Active these days  Mo ☑ Tu ☑ We ☑ Th ☑ Fr ☑ Sa ☐ Su ☐

Figure 18: example of a weekly mask

*Please Note*: if you do not select at least one day of the week, the calendar event will never be triggered. Also, if you set an event to be triggered on a day of the week which is not selected in the weekly mask, it will never be triggered.

### 7.2.4.3.2  DAILY REPETITION

Daily repetitions. This option is set to be deselected by default. Selecting it will open a drop-down menu where you can configure the repetition conditions:

- **Interval**: repetition interval. This indicates how often the calendar event triggering is repeated, beginning at the Start Time.
- **Times**: number of repetitions. This indicates the number of times that the calendar event will be repeated, with time in between as indicated by the value in "interval". The first time the event is triggered each day does not count as a repetition, so if you want an event to be triggered twice a day, "times" should be set to 1 (the first time + 1 repetition). This value must be equal to or greater than 1.

**Daily repetition**

Repeat ☑

Interval  01 ⌄ : 00 ⌄ : 00 ⌄

Times  5

The event will finish at  13:00:00
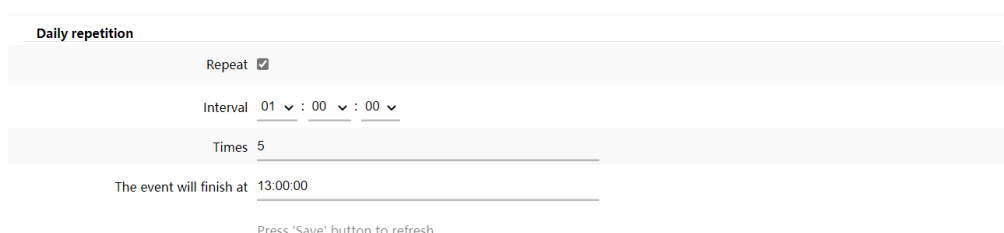
Press 'Save' button to refresh

Figure 19: daily repetition example

- **"The event will finish at"** indicates the time at which the calendar event will run for the last time each day. This parameter cannot be configured (read only). It is intended to help the user configure the "Interval" and "Times" parameters in a more efficient way.

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## 7.2.4.4 TARGET

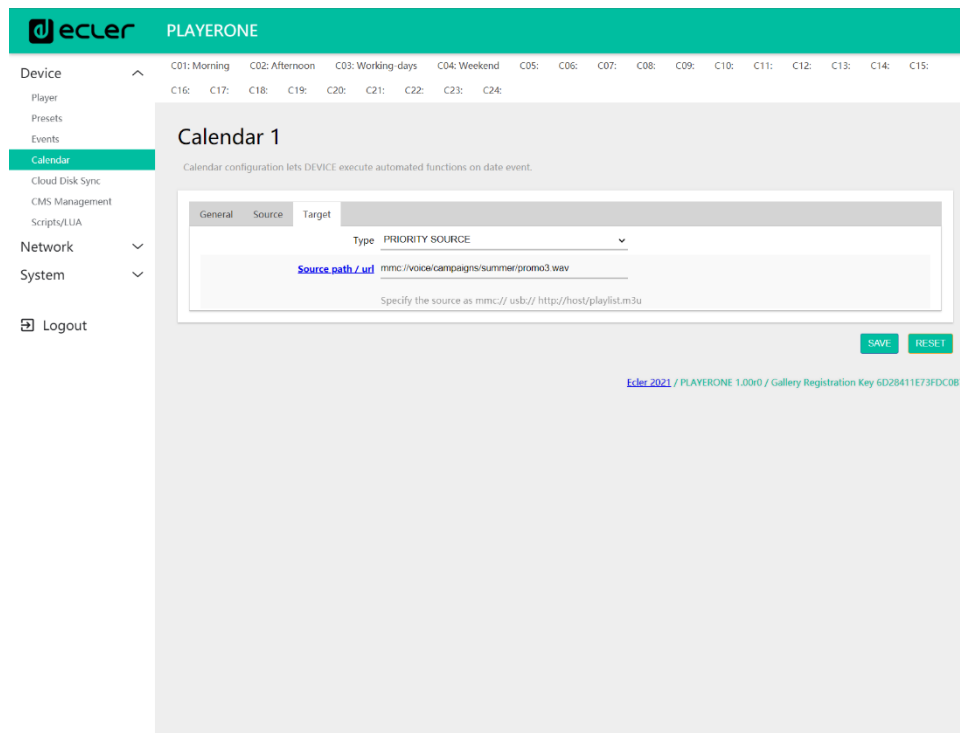An action that is executed each time the calendar event is triggered.



Figure 20: calendar event example, Target

This action may be:

1. **Internal**: internal stimulus (does not perform an action directly, but allows actions to be triggered via scripts)
2. **Preset** recall: loading a preset
3. **Transport control**: pressing a button on the transport bar; STOP, PLAY, PREV, NEXT, PLAY/PAUSE
4. **Load & Play source**: loading and playback of a source
5. **Priority source**: playback of a source with priority. The source with priority will overwrite the source that is currently playing. When the priority announcement/message ends, the source that was playing will start to play again.

## 7.2.4.5 REGARDING PRIORITIES

Calendar events have **lower** priority than events that are triggered by GPI. Therefore, different degrees of priority can be established. For example, in a shop, calendar-based events can be used to trigger voice messages indicating an offer, while GPI events can be used to trigger an evacuation message.

In addition, there is a higher level index that determines priority if it is the case that 2 calendar-based triggers occur at the same time. For example, CALENDAR02 is set to repeat a message every hour and CALENDAR03 is set to repeat a message every two

hours (both events have the same start time). The messages will alternate every hour, as CALENDAR03 will take precedence over CALENDAR02.

If a calendar event is playing and then a second event comes in, the last event to arrive will overwrite the one that is playing, regardless of their indexes.

When a priority event is playing, it can be seen on the PLAYER ONE screen. The characters **PC01** indicate: **P**, event with Priority; **C**, calendar event; and **01**, calendar index, from 01 to 24.

If this is an event triggered by a GPI, PI01 or PI02 will be shown on the screen, indicating: **P**, event with Priority; **I**, GPI event; and **01**, GPI input index, from 01 to 02.

| A | r | t | i | s | t | - | s | o | n | g | . | m | p | 3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ▶ | 0 | 2 | : | 5 | 6 | | P | C | 0 | 1 | | U | S | B |

Figure 21

*Please Note*: PLAYER ZERO does not have an LCD screen.

### 7.2.4.6    PRACTICAL EXAMPLE OF CONFIGURETION OF CALENDAR EVENTS

An establishment whose business hours are 10:00 a.m. to 8:00 p.m., and which is open from Monday to Friday, requires background music, and will periodically make announcements to its customers.

- **Background music**: this will always be the same audio *stream*. It will start playing at 9:45 a.m., and it will play continuously until 8:00 p.m. At this time, there should no longer be audio playing in the establishment.
- **Announcements**: every day, the closing time of the establishment will be indicated (pre-recorded message) 15 minutes before closing. It will be recalled again 5 minutes before closing.
- **Campaigns**: there will be a special Christmas campaign from 15 December to 15 January indicating an offer (pre-recorded message). This message is to be repeated every day during this period, every 30 minutes.

*Please Note:* there may be several methods of meeting these requirements. This example attempts to illustrate the most relevant features of calendar events in a simple way.

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### 7.2.4.6.1 CALENDARS FOR BACKGROUND MUSIC

2 calendar events will be created: one to load the *stream* and play it, and another to stop it.

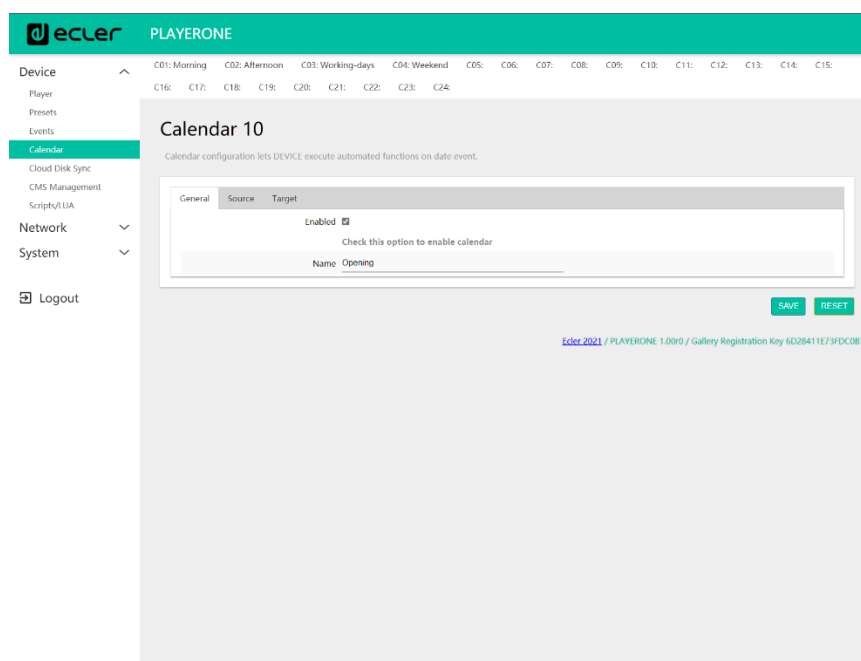The calendar is enabled, and it is given an identifying name.



Figure 22

Since no start date is specified, "Start date" is left as the default value ("dd/mm/yyyy"). This means that the event is active from the day the changes are applied. The time is known (9:45 a.m.), and it is to be played every day, without an end date (FOREVER).

Since the event is to be repeated from Monday to Friday, the corresponding days are selected in the weekly mask.
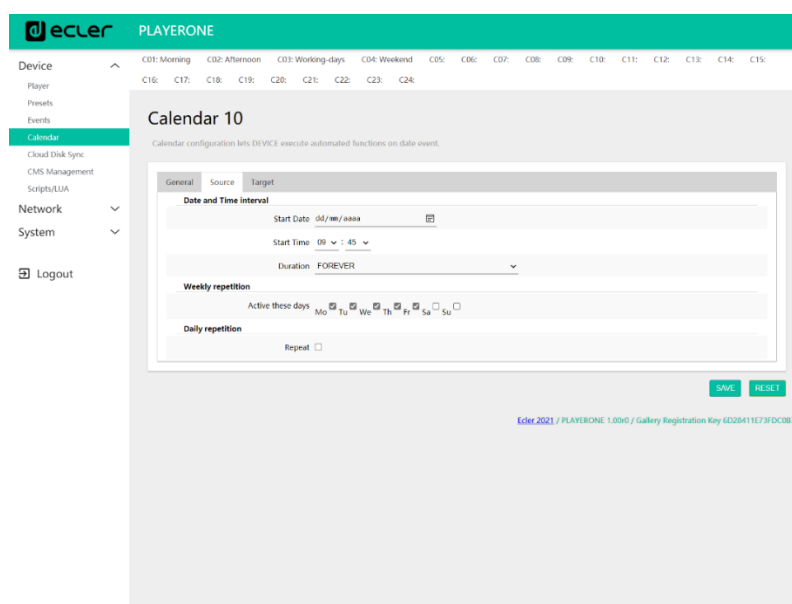


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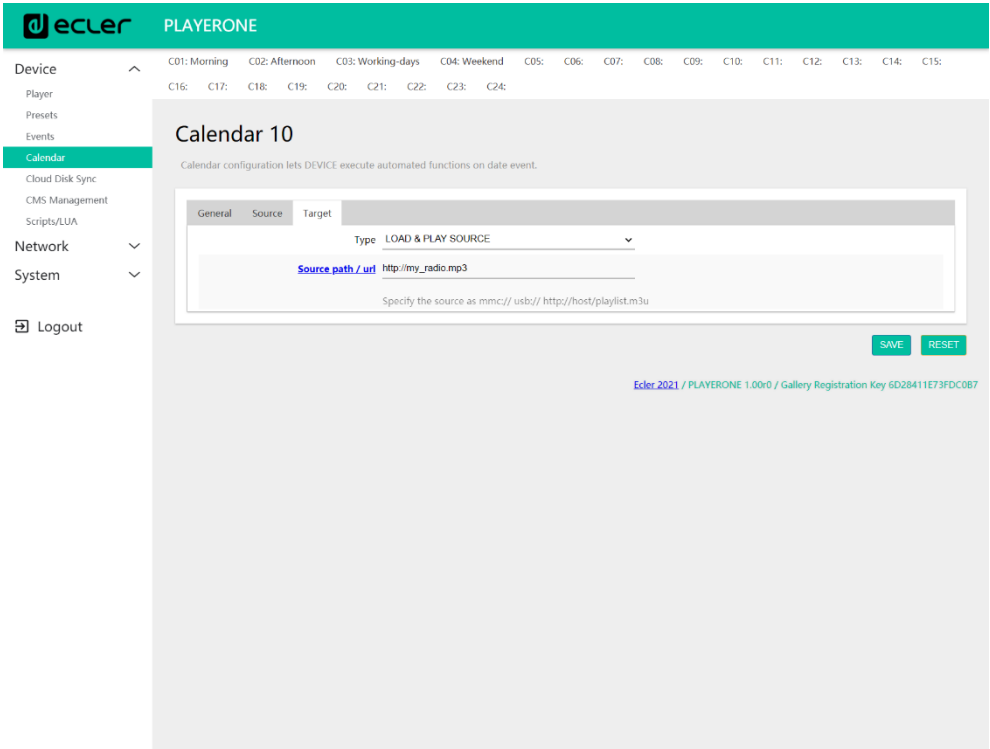The action of loading and playing the specified *stream* is configured.



Figure 24

The calendar event that will stop the playback of the background music is configured in the same way as the last one. The only difference is that this time the action in question is to stop the playback; STOP. This calendar event will be given a different name and start time.
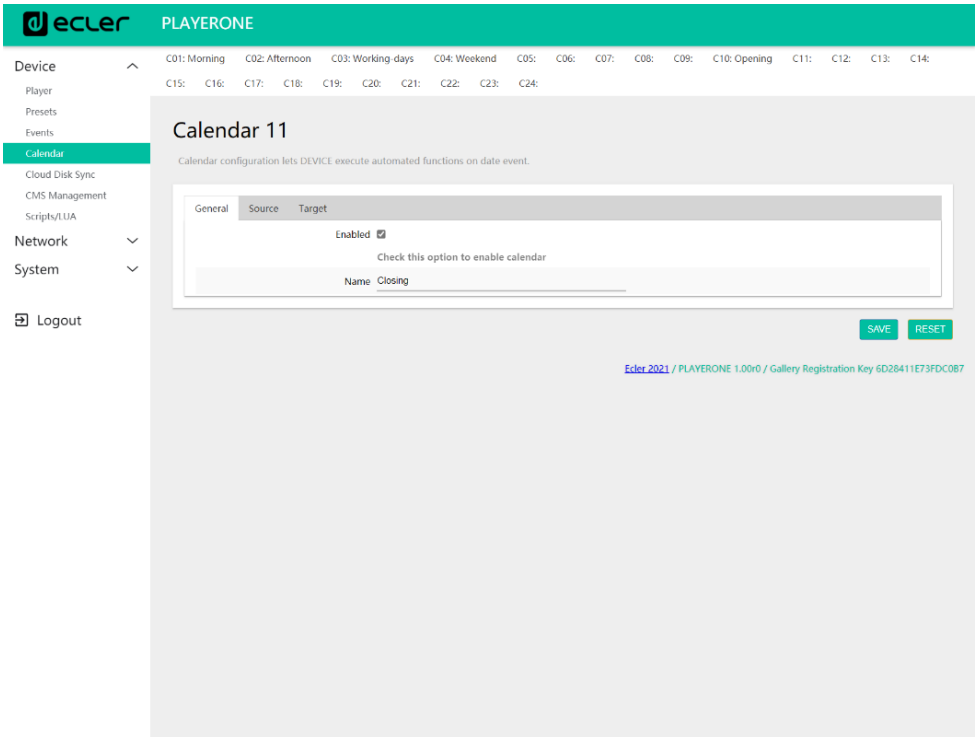


Figure 25

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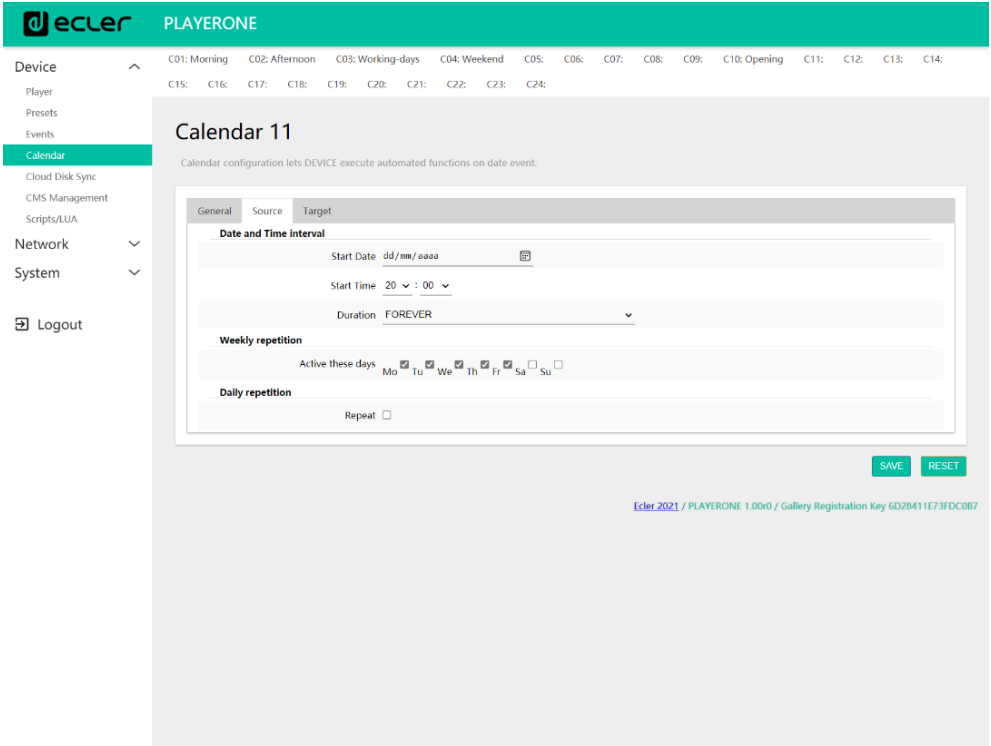
SW

TP-CONTROL
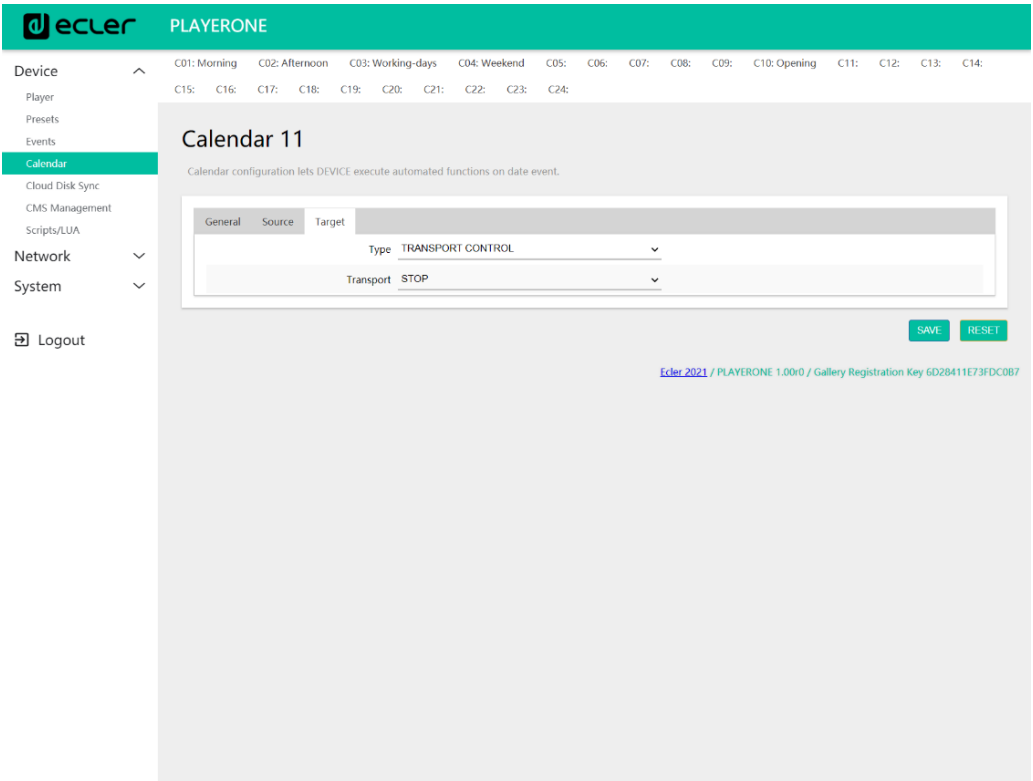
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## 7.2.4.6.2 CALENDAR FOR CLOSING ANNOUNCEMENTS

Every day, the closing time of the establishment will be indicated (pre-recorded message) 15 minutes before closing. It will be recalled again 5 minutes before closing.
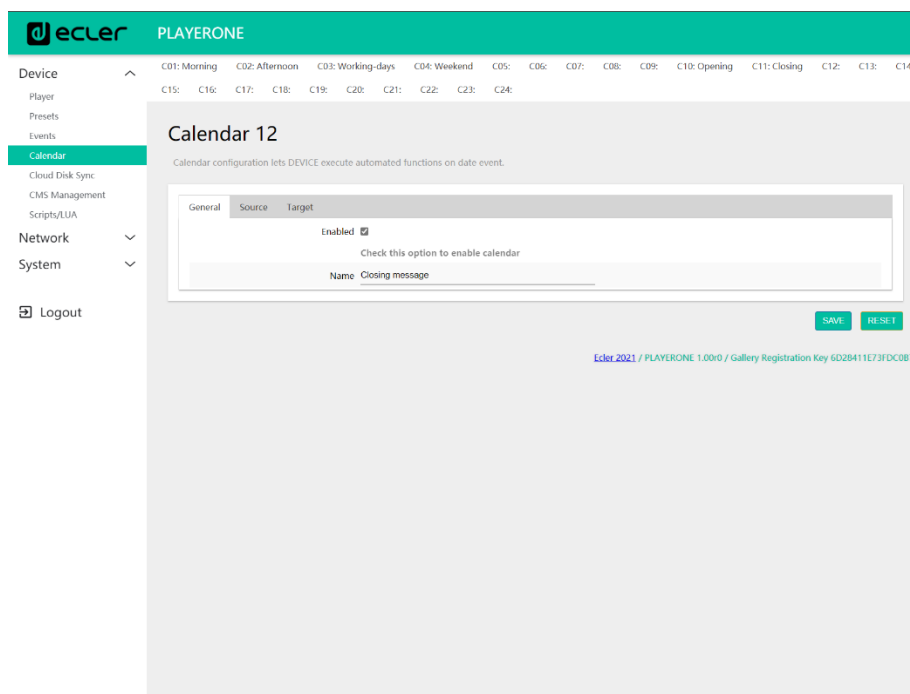


Figure 28

The message should be played twice a day: 15 minutes before closing (at 7:45 p.m.) and 5 minutes before closing (at 7:55 p.m.). Therefore, it will be necessary to configure a calendar event that repeats one time, 10 minutes after it is triggered for the first time. This is achieved by enabling *Repeat* and configuring the *Interval* and *Time* parameters correctly.
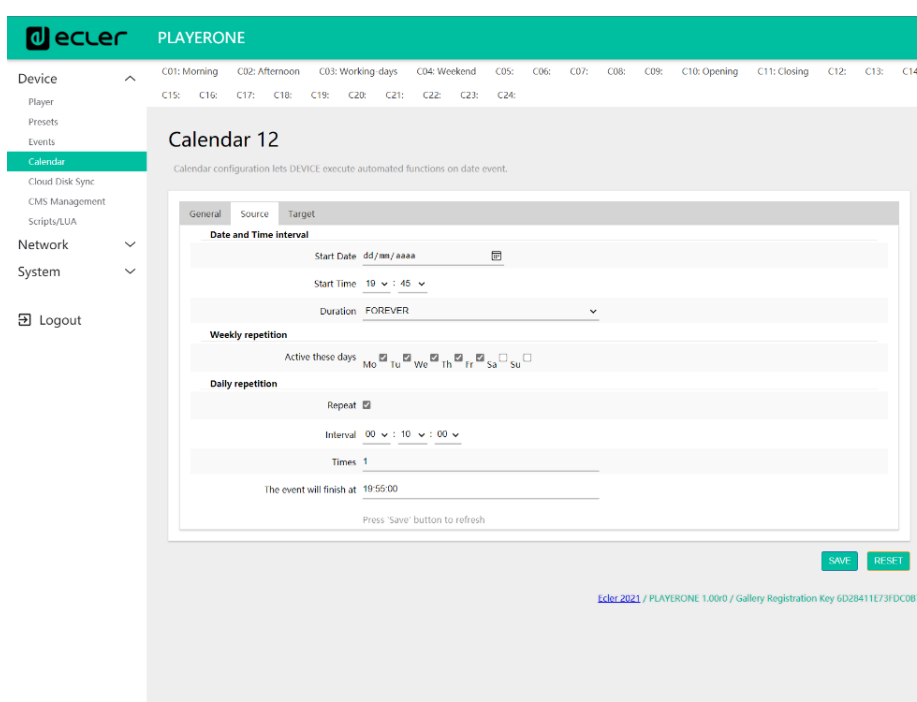


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Finally, the message located on the SD card ("mmc://...") will be announced with priority.
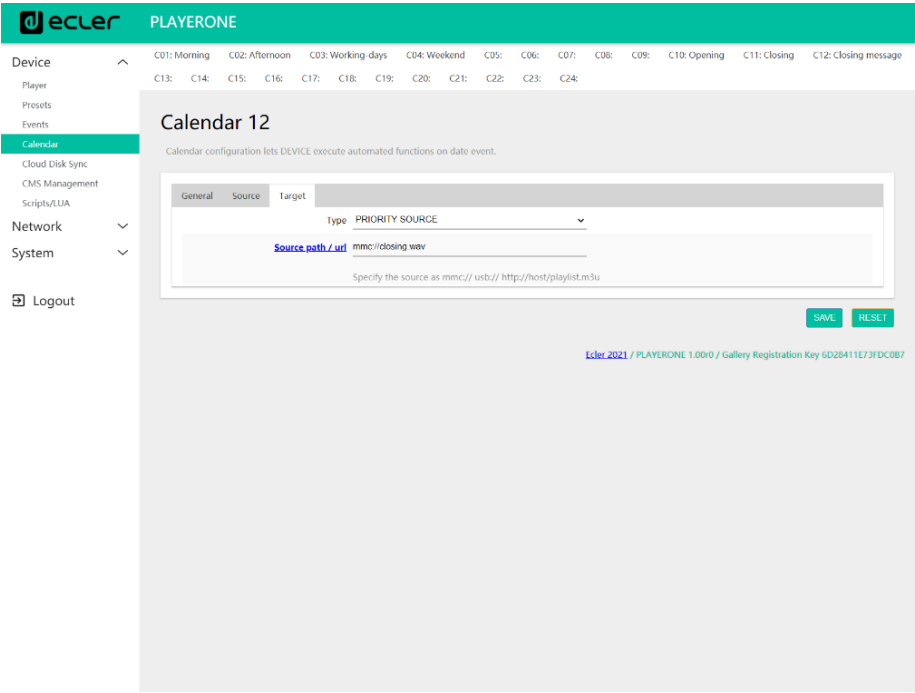


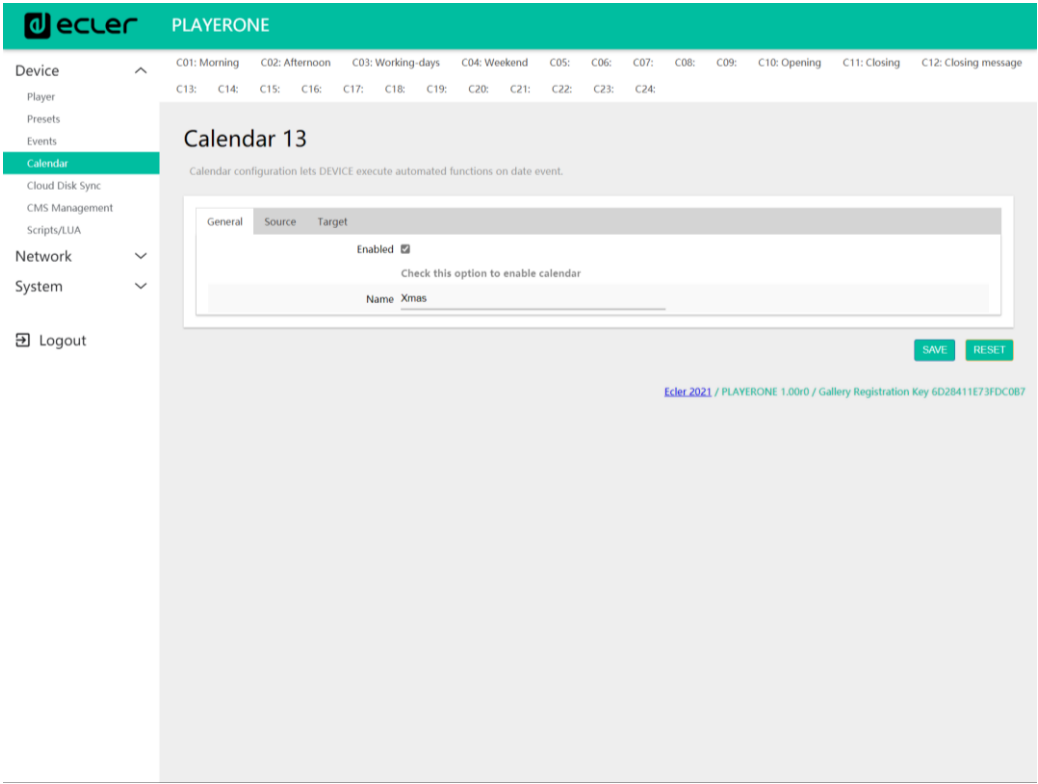Figure 30

### 1.1.1.1 CALENDAR FOR CHRISTMAS CAMPAIGN



Figure 31

As this is for a specific calendar interval (15/12/21 to 15/01/22), an end date is set by choosing CUSTOM END DATE and setting the *End date* and *End time* parameters correctly.

Regarding repetitions, the message has to be played every 30 minutes, and it is known that the establishment closes at 8:00 p.m. As there will be no audio at 8:00 p.m., we will set the number of repetitions in such a way that the last time the event is triggered is 30 min before closing.
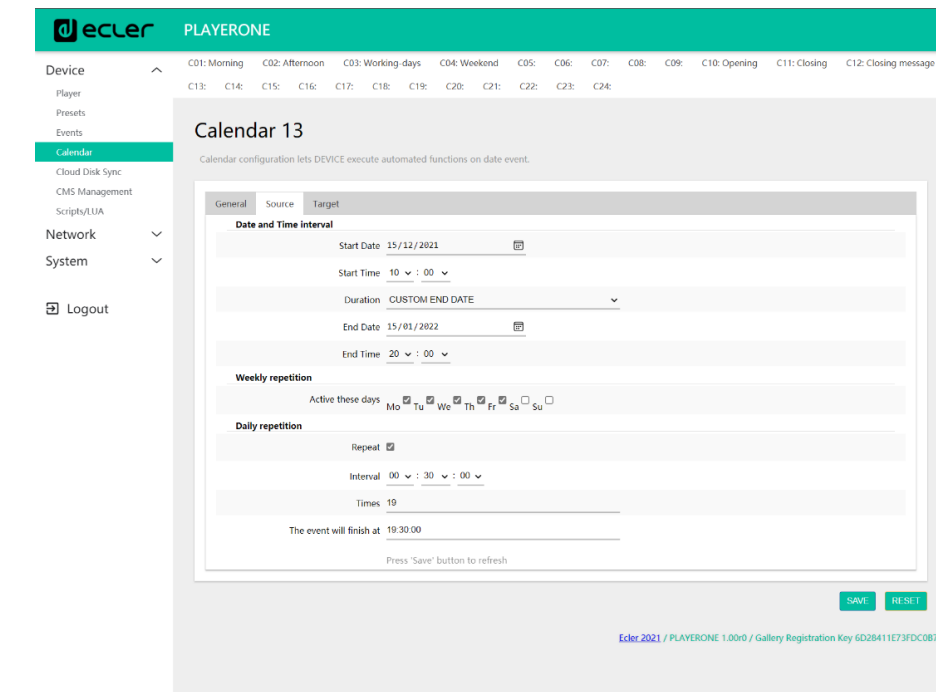


Figure 32

Finally, the message located on the USB device ("usb://...") will be announced with priority.
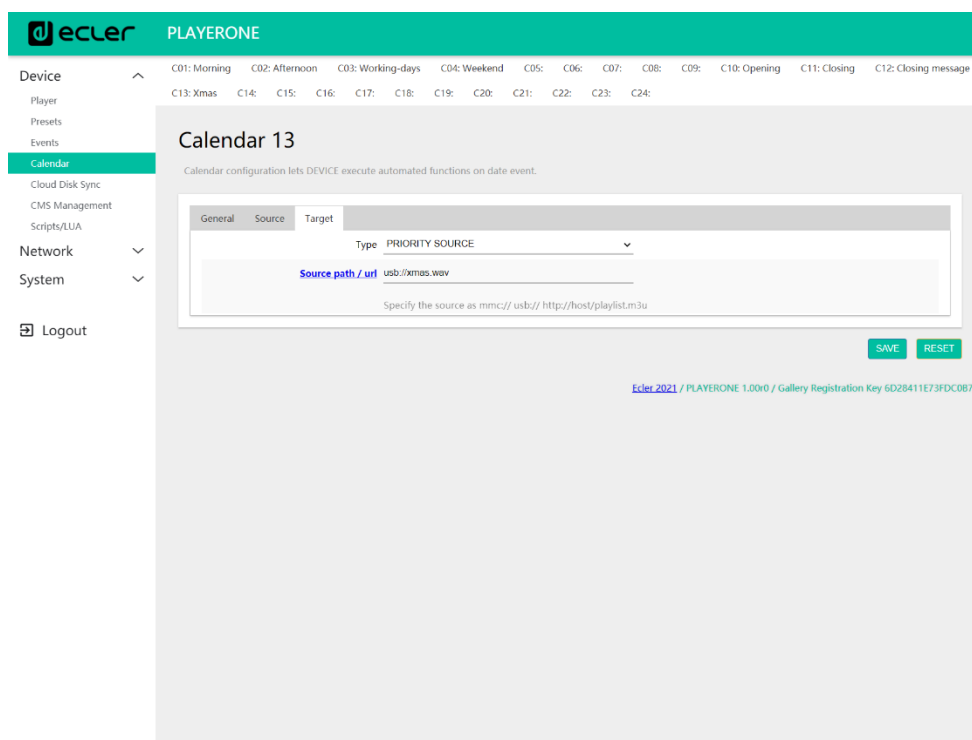


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### 7.2.5 CLOUD DISK SYNC

The Cloud Disk Sync module allows the device to download remote audio content to local storage media (USB/uSD). When it is active, it checks a remote location that hosts audio content on a daily basis, compares it to the current content stored on local media (USB/uSD) and, if necessary (if differences are detected), syncs the local content to make it an exact copy of the remote content. This is a safe method of playing content during the device's working hours (during the day), as it is stored on local media, and does not carry the same risks as receiving real-time *streaming*.
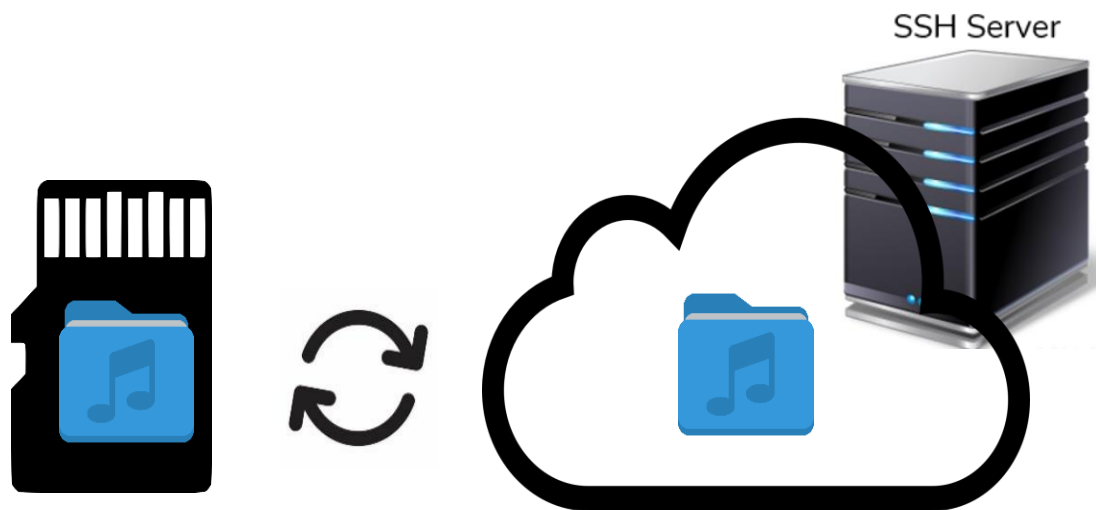


Figure 34: syncing folders with Store and Forward (rsync)

PLAYER ONE/PLAYER ZERO enables syncing through **Store and Forward (rsync)**.

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### 7.2.6 STORE AND FORWARD (RSYNC)

The **Store & Forward module allows you to sync the content of the USB/uSD device with a folder that is hosted on a remote server on a daily basis**. It also allows for automatic playback of this content, in combination with the *Load preset1* reboot mode. **This service uses the** *rsync (Remote Sync)* **sync tool.**
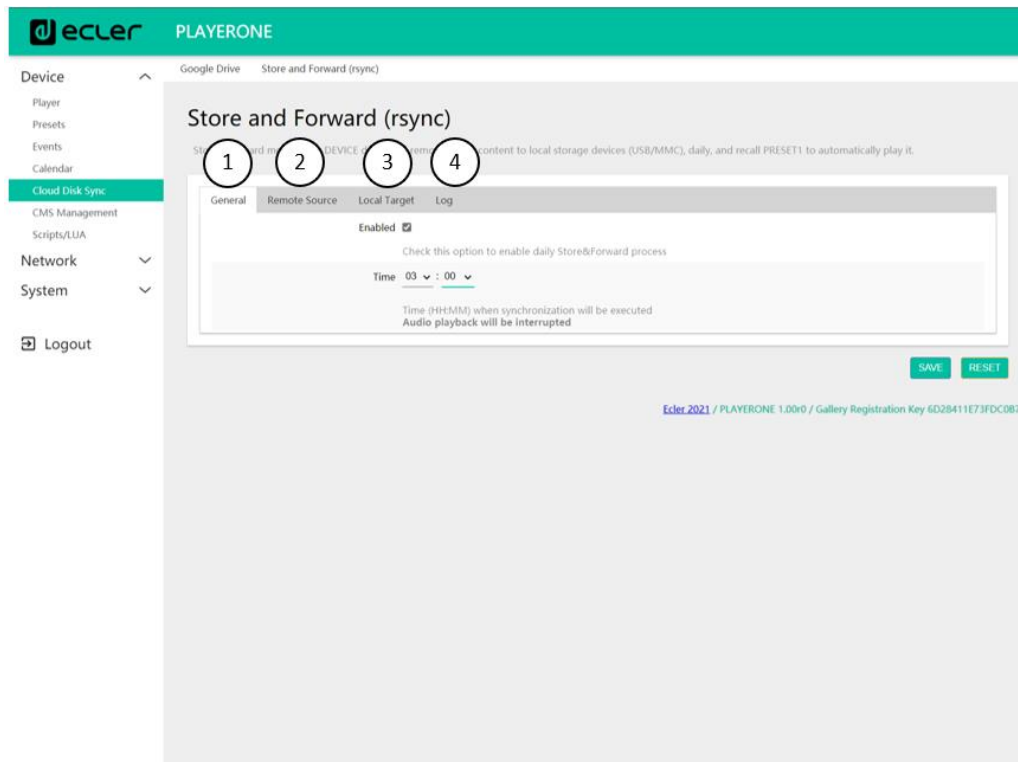
Figure 44: Store & Forward module

1. **General**: enables the S&F service and selects the sync time.
2. **Remote source**: remote server conFiguretion.
3. **Local target**: conFiguretion of the local folder where the content is stored.
4. **Log**: activity log for the S&F module

💡 **For more information on the Store & Forward service**, please refer to the chapter ConFiguretion of an SSH server for Store & Forward (rsync).

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Figure 45: S&F, General

- **Enabled**: This enables/disables the running of the daily sync.
- **Time**: time at which the daily sync is run.

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## 7.2.6.2   REMOTE SOURCE

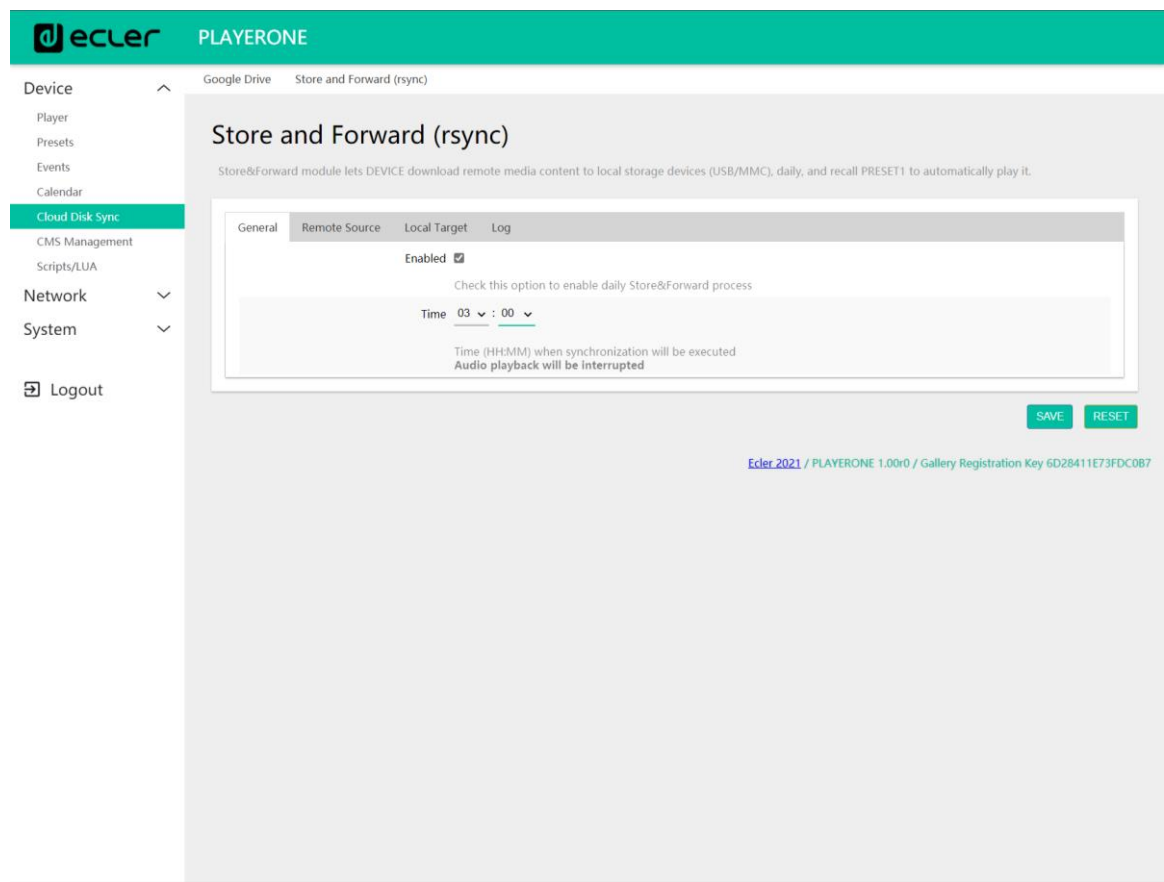

Figure 46: S&F, Remote source

- **Host**: host or IP address of the server.
- **Port**: server port, by default, 22
- **Folder**: directory within the server where the audio content that is to be synced is stored.
- **Username**: user or name of the content group
- **Private key**: private password generated for the indicated user or content group.

*Please Note:* for security and efficiency reasons, the remote server where the content is hosted must be **SSH**, and public and private passwords must be enabled and used.

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## 7.2.6.3 LOCAL TARGET
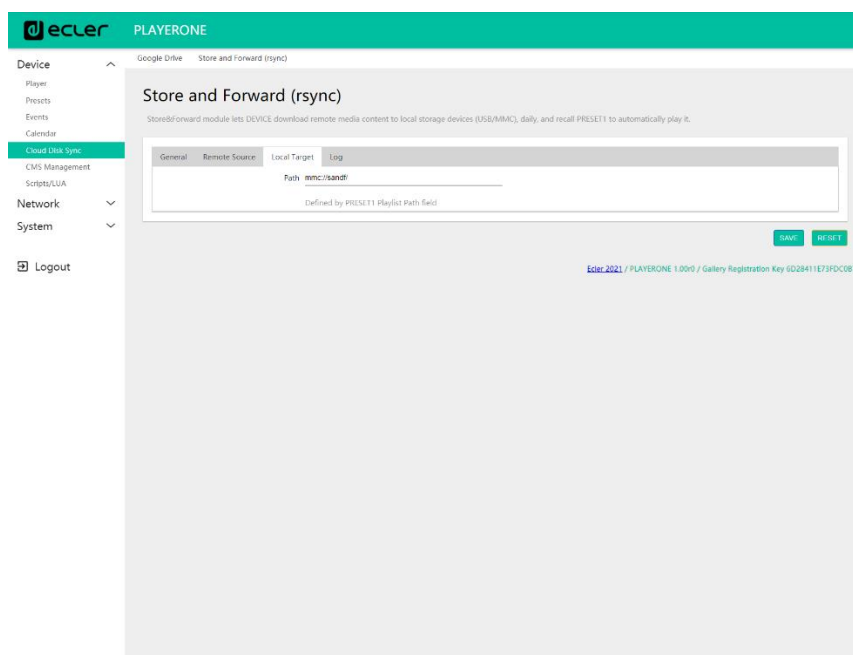


Figure 47: S&F, Local target

- **Path**: defined by the Playlist Path field for PRESET01. This can be changed in the *preset* settings.

## 7.2.6.4 LOG
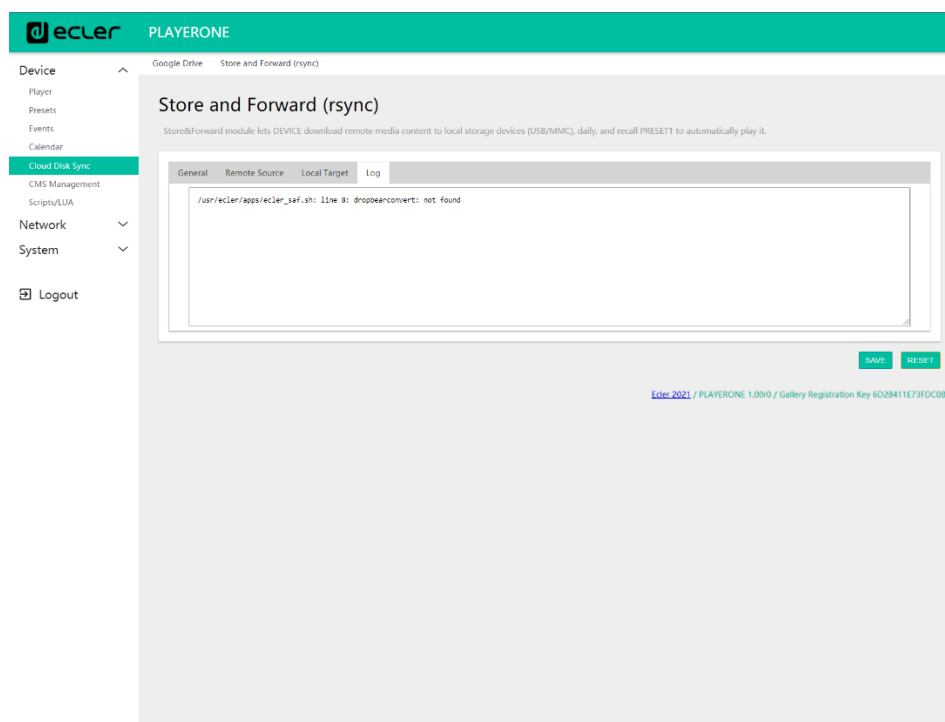


Figure 48: S&F, Log

- This displays information and activity in relation to the *rsync* syncing process. It is useful for debugging possible server or device conFiguretion problems.

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## 7.2.7    SCRIPTS / LUA

A *script* is a simple program; a file of instructions written by the user in LUA language (https://www.lua.org/).

Each *script* can be thought of as a script that the player runs; a series of pre-programmed tasks that are run when a certain stimulus is received.



Figure 49: Script example

1. PLAYER ONE/ PLAYER ZERO has **20 *scripts*** available, each of which is completely conFigureble. The default names are: S01, S02..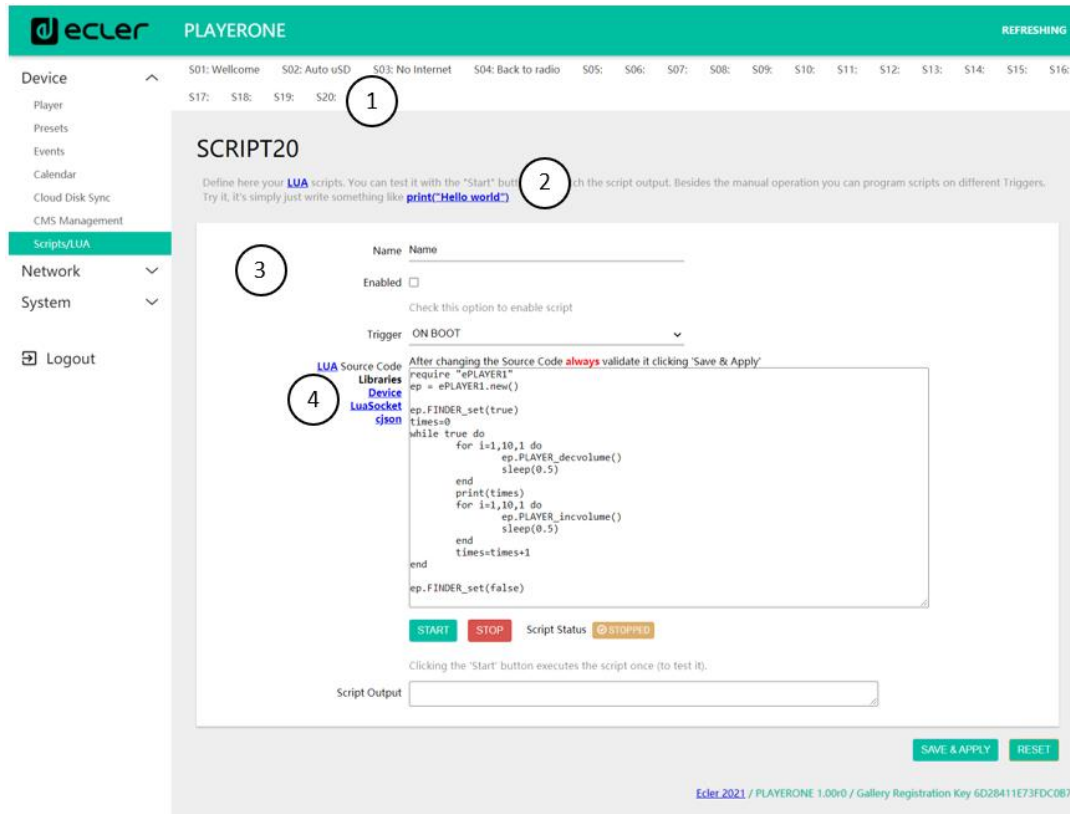.S20. When you click on the name, it will take you to the conFiguretion for that *script*. The name that appears here for the *script* can be edited within the *script* conFiguretion. After this setting is saved in the *script*, you need to refresh the browser page (F5) in order to display the changes.

2. Useful information for *script* conFiguretion and Lua reference manual.

3. Parameters of each *script* that can be configured:

   - **Name:** name given to the *script* by the user. This name will appear in the header of the Scripts/LUA page.
   - **Enable:** enables or disables the *script*.
   - **Trigger:** stimulus that triggers the execution of the *script*. There are different ways to trigger a *script* or automate tasks:

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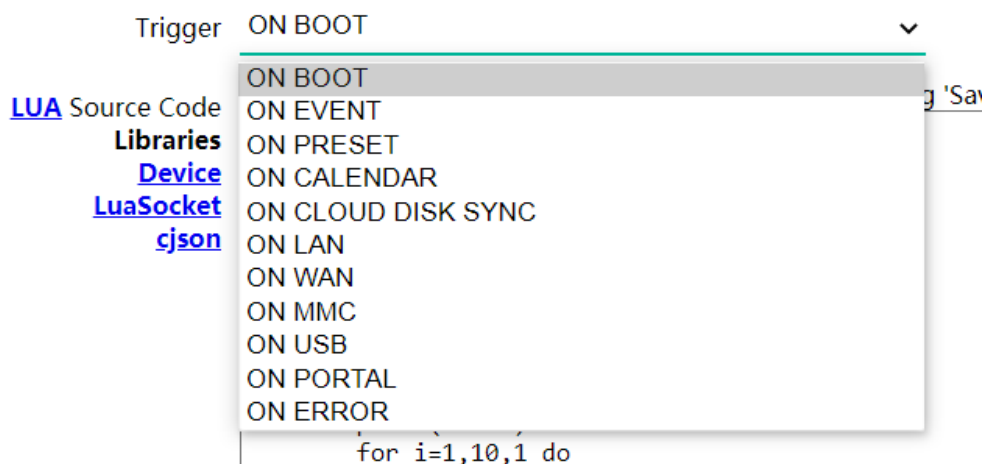
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Figure 50: available stimuli

- **ON BOOT**: when the device boots up. Start-up tasks can be configured.

- **ON EVENT**: when a GPI event (GPI1 or GPI2), or the silence detection event (SILENCE), is triggered

- **ON PRESET**: after loading a *preset*. One of the 20 *presets* has to be selected, and when it is recalled the *script* will be triggered.

- **ON CALENDAR**: when a calendar event is triggered. One of the 24 calendar events has to be selected, which will, in turn, trigger the script.

- **ON CLOUD DISK**: when syncing with a remote server is successfully completed (with sync result "OK"). It must indicate the server it synced with *rsync*.

- **ON LAN**: when detecting whether the LAN (local network) is available or not.

- **ON WAN**: when detecting whether the WAN (Internet access) is available or not.

- **ON MMC**: when a uSD card is connected or disconnected, and recognized correctly by the device.

- **ON USB**: when a USB device is connected or disconnected, and recognized correctly by the device.

- **ON PORTAL**: when syncing with the Ecler Gallery is successfully completed (with sync result "OK").

- **ON ERROR**: when the error indicated in "Error code" with a code occurs. A table of error codes can be found in the PLAYER ONE PLAYER/ZERO programming library (programmer's appendix).

- **LUA Source Code:** the text of the *script* must be entered in this field.

4. **Execution buttons**: script execution and stop buttons. The START button runs the *script* immediately, without the need for the programmed stimulus to occur. The *script* must be saved before you click on this button in order for the changes to be applied. This is useful for testing. The STOP button stops the running of the *script*. These functions are especially useful during *script* programming, as they allow you to check the actions executed by each *script* and debug the code.
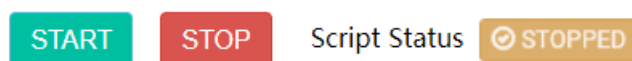


Clicking the 'Start' button executes the script once (to test it).

Figure 51: script execution buttons

- **Status**: shows the status of the *script*: RUNNING (flashing) the *script* is running, or STOPPED (steady), the *script* has finished or stopped.
- **Script output**: output/return value of the *script*. You can write output messages that will appear on this screen. This is useful for debugging scripts.
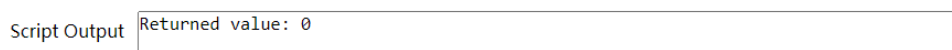


Figure 52: example of a script return value

- **Documentation for programmers:** links (blue) available on the device for consultation (Internet connection required):
  - ○ **LUA**: LUA programming language manual
  - ○ **Device**: PLAYER ONE/PLAYER ZERO LUA library (programmer's annex). Details the objects, functions, and parameters of the library. Interface between LUA and the firmware of the device using the JSON protocol.
  - ○ **LuaSocket**: LuaSocket library documentation.
  - ○ **cjson**: LUA CJSON module documentation. Provides JSON support for LUA.

The **following chapters show a number of examples of simple *scripts***. Keep in mind that this **PLAYER ONE/PLAYER ZERO programming and customization tool is very powerful**, **as the same *script* can execute several tasks which can be linked together**, depending on various circumstances, and thus implement an entire logic and intelligence in the way it works.

**The only limit is your imagination!**

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## 7.2.7.1  EXAMPLE SCRIPT01:

**Write messages on the LCD screen**

The following is an example of how to write a message on the LCD. This message has been configured so that, when the player starts up, the message "Hello Ecler" is displayed on the screen for 10 seconds.

*Please Note*: this is only available for PLAYER ONE. PLAYER ZERO does not have an LCD screen.



Figure 35

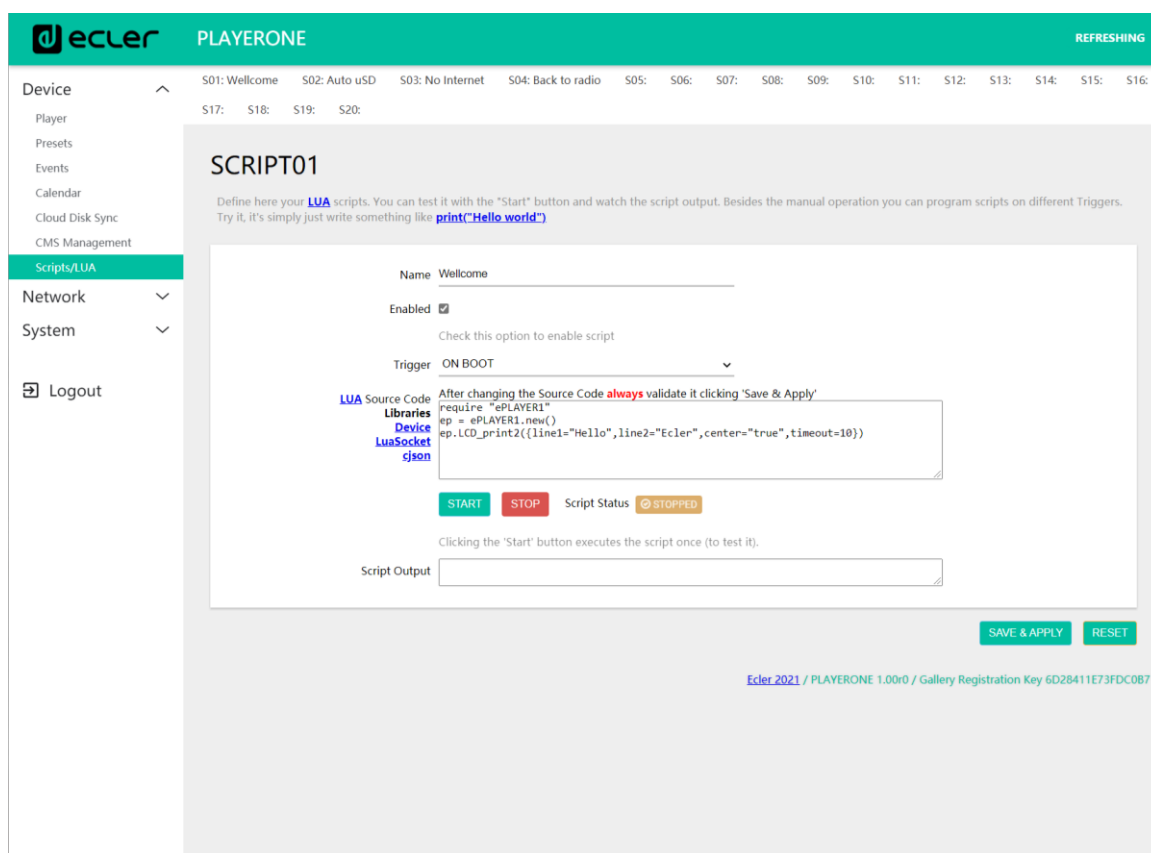- require "PLAYER"
- ep = PLAYER.new()
- ep.LCD_print2({line1="Hello",line2="Ecler",center="true",timeout=10})

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## 7.2.7.2   EXAMPLE SCRIPT02:

**Automatically play uSD cards when inserted**

There are applications in which the local storage medium will change depending on the user. For example, an activity room in a gym where, for each session, different instructors will change the music. In other words, they will connect their USB device or uSD card to play their content. This can be automated so that users simply have to insert their device into the device, and playback starts automatically. This avoids unauthorised tampering and/or saves them from having to read the manual for the device.

So, the following example *script* automatically plays the uSD card as soon as it is inserted. You could create a *script* to do the same thing with the USB device, by simply changing the trigger and the URL.
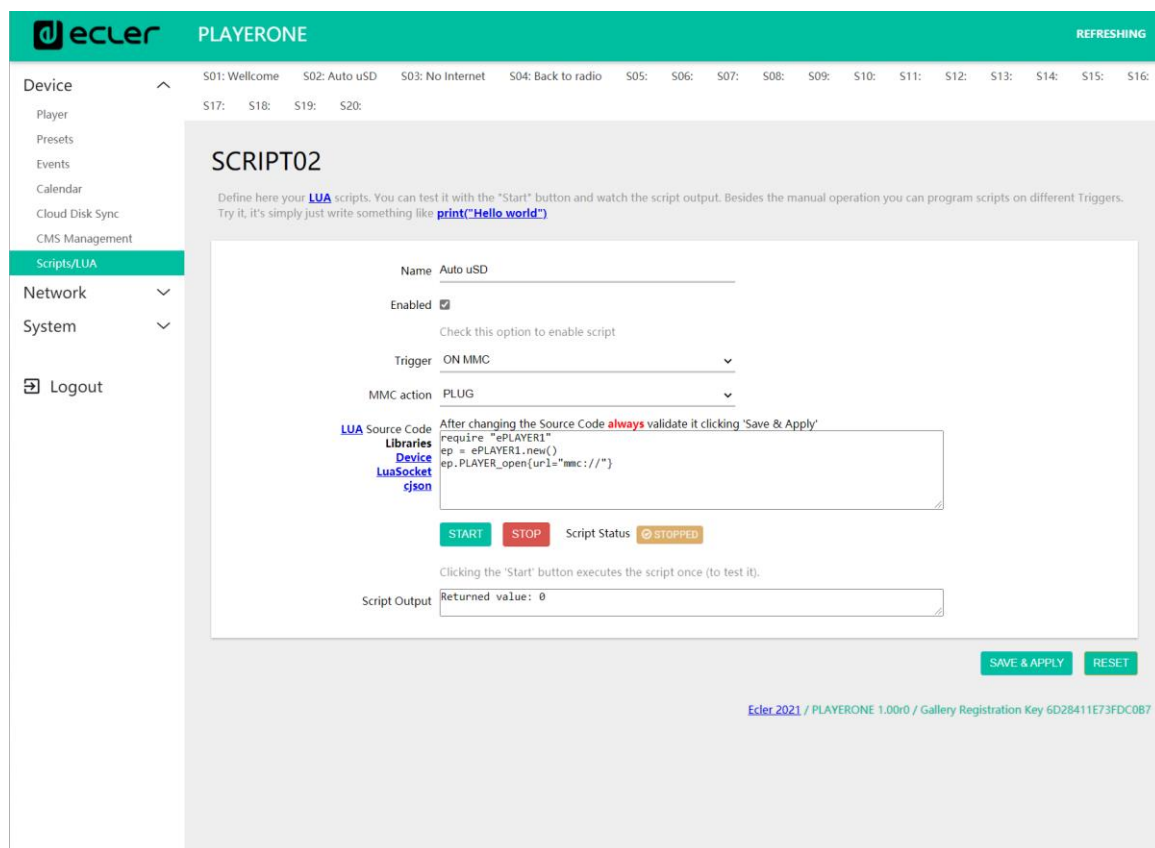


Figure 54

- require "PLAYER"
- ep = PLAYER.new()
- ep.PLAYER_open{url="mmc://"}

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### 7.2.7.3  EXAMPLE SCRIPT03:

Messages can be configured for practical uses. The following *script* displays a "NO INTERNET" message that flashes when the Internet (WAN) connection is lost. It has also been written in such a way that we can use the "blink" function multiple times within the same *script*. In addition, it loads *preset1*, which has local audio content stored and set to play (PLAY) when loaded, in order to ensure continuity of the music program.
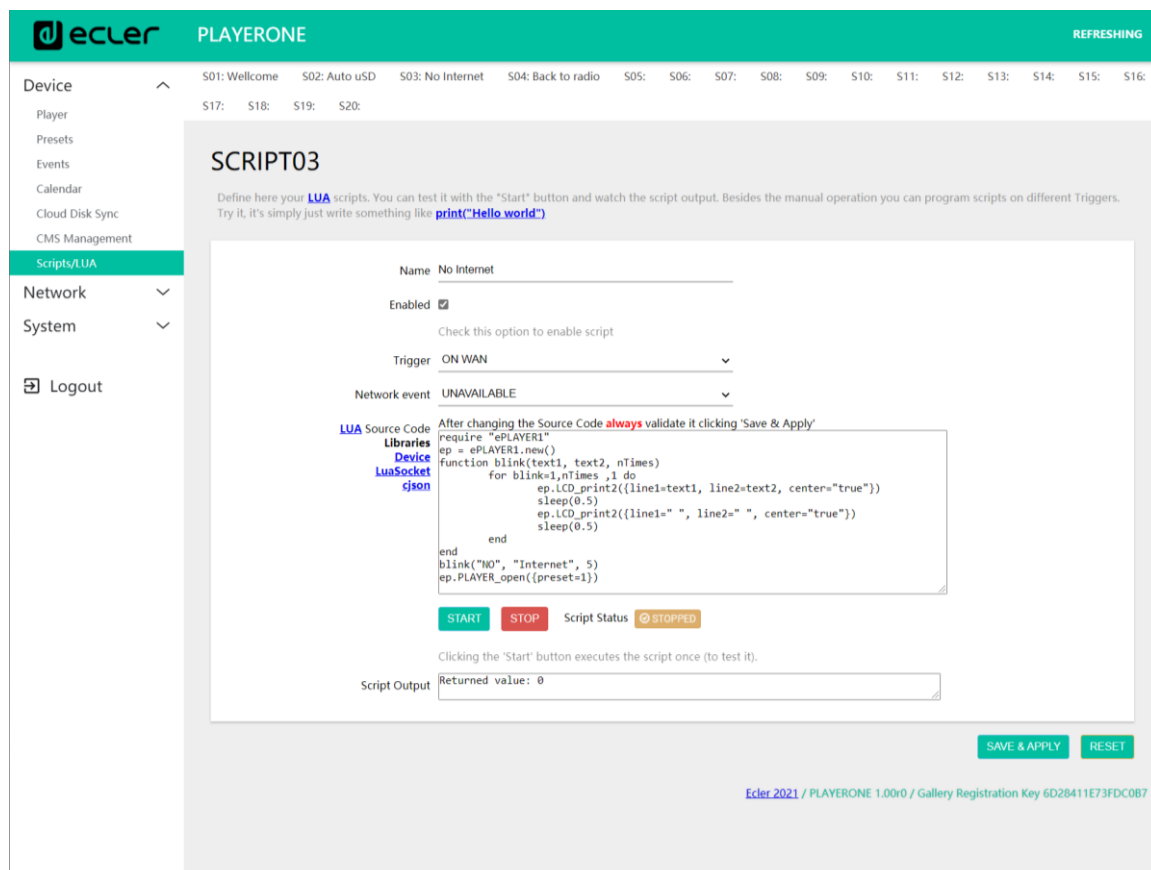


Figure 55

```
require "PLAYER"
ep = PLAYER.new()
function blink(text1, text2, nTimes)
        for blink=1,nTimes ,1 do
                ep.LCD_print2({line1=text1, line2=text2, center="true"})
                sleep(0.5)
                ep.LCD_print2({line1=" ", line2=" ", center="true"})
                sleep(0.5)
        end
end
blink("NO", "Internet", 5)
ep.PLAYER_open({preset=1})
```

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## 7.2.7.4   EXAMPLE SCRIPT04:

**Play an Internet radio station when the Internet connection is restored.**

The following *script* loads a *preset* when an available Internet connection (WAN) is detected. It can be good to use this in combination with the silence detection event:

The device is playing an Internet radio station, however, due to a network problem, it no longer has access to the radio. After a few seconds without audio, the silence detection event is triggered, and the device starts playing content from the uSD card (back-up music). However, you want the radio that was playing to start up again automatically once the Internet connection is available again.
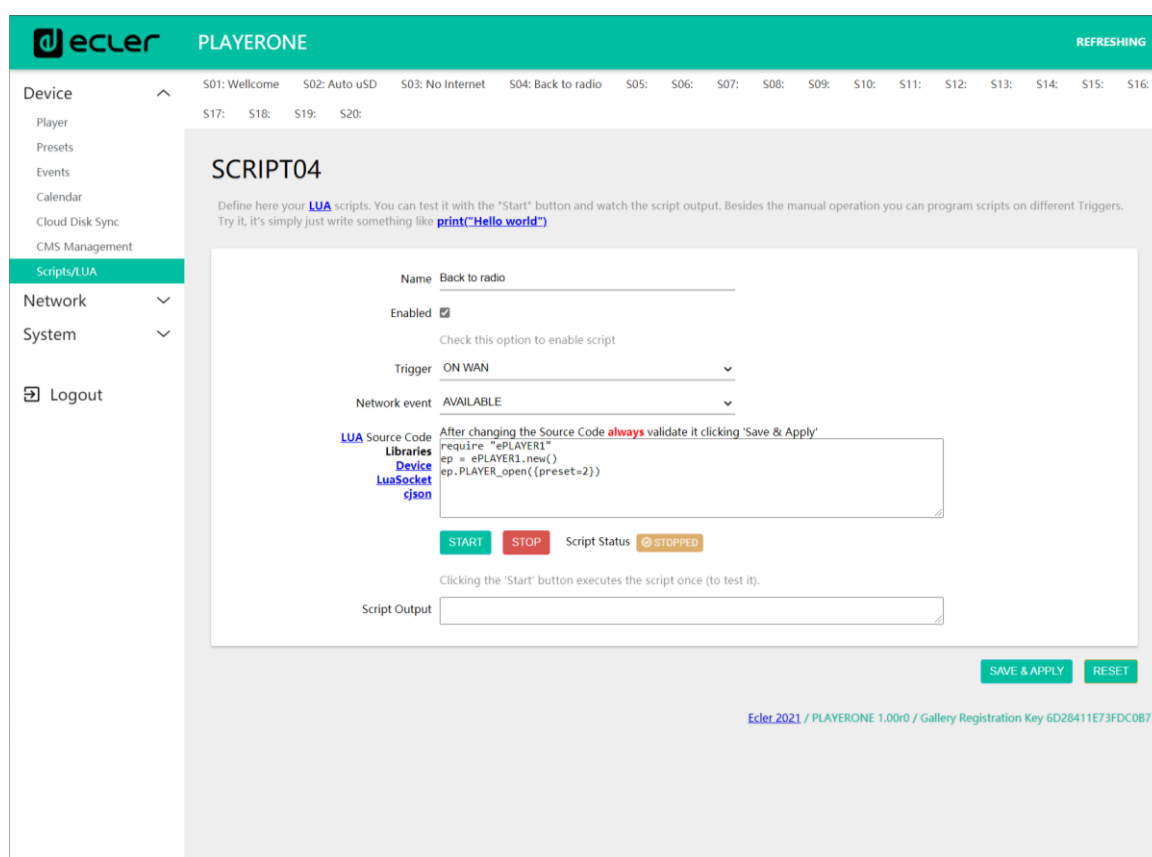


Figure 56

require "PLAYER"

ep = PLAYER.new()

ep.PLAYER_open({preset=2})

## 7.3  NETWORK

Allows you to configure the Ethernet and WiFi network interfaces.
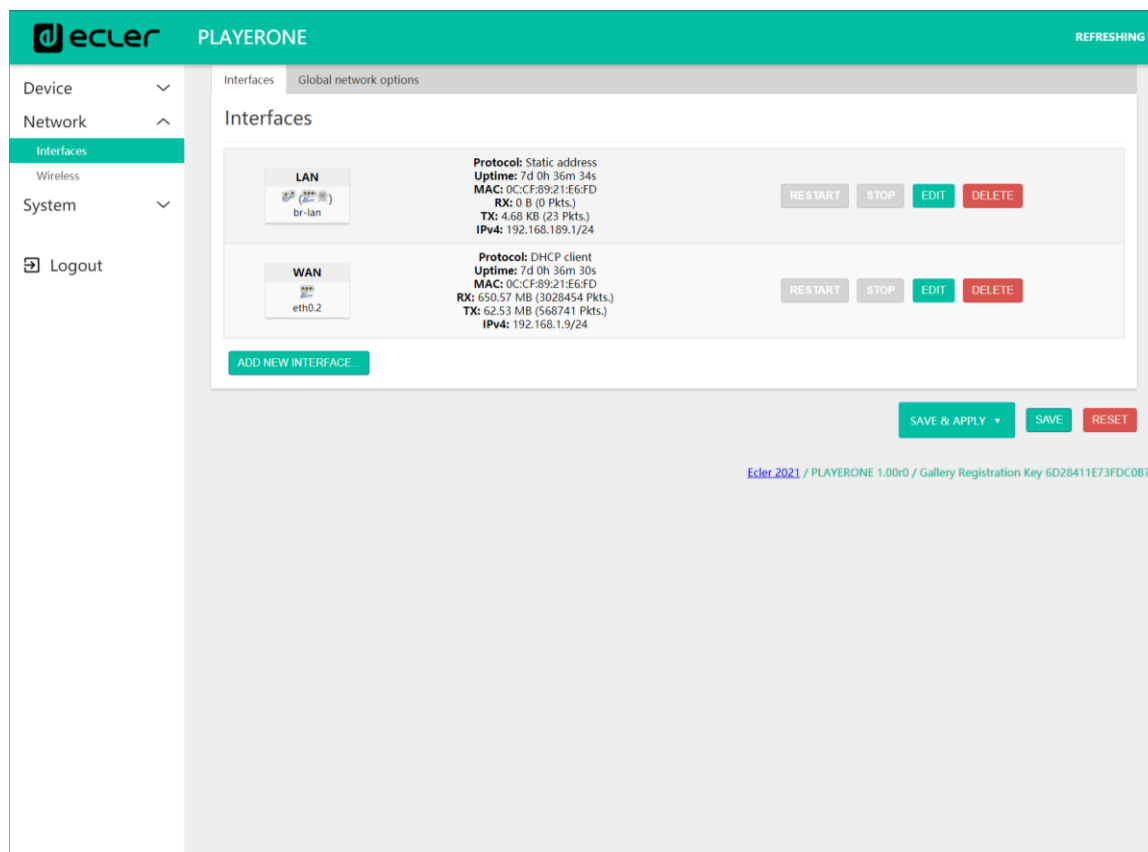


Figure 57: Network, Interfaces

- **Interfaces**: allows parameters to be edited for the wired connection, RJ-45 Ethernet port (LAN/WAN).
- **Wireless**: allows parameters to be set for the wireless connection, WiFi interface.

*Please Note*: for detailed information on all network parameters, click on this [link](link).

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## 7.3.1 CONNECTION VIA RJ-45 CABLE

By default, PLAYER ONE/PLAYER ZERO has automatic network addressing (DHCP). To change to manual addressing (editing network parameters), access the web application and go to the Network/Interfaces menu.
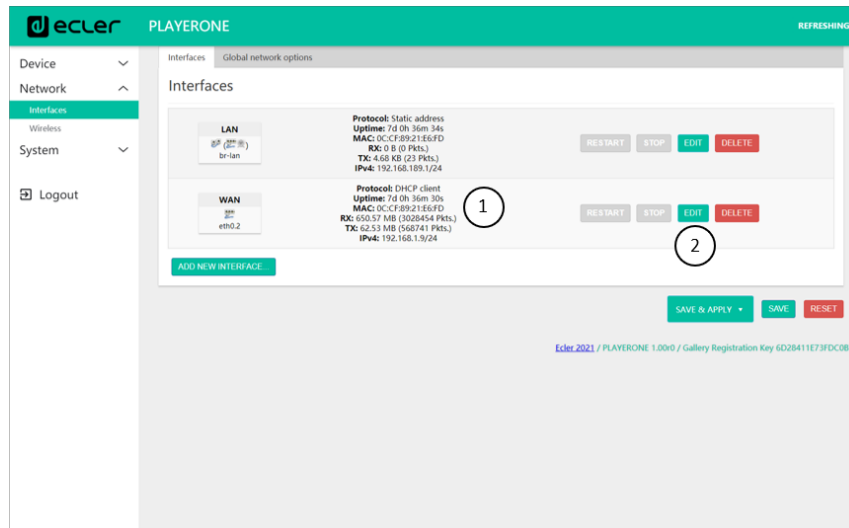


Figure 58

1. **Network information:** checking network parameters and network information

   - **Protocol:** DHCP client/static address
   - **Uptime:** connection time
   - **MAC:** MAC address of the device
   - **RX:** amount of data received
   - **TX:** amount of data transmitted
   - **IPv4:** IP address of the device

2. **Edit network parameters:** accesses the Ethernet interface conFiguretion

Press the EDIT button to access the Ethernet interface conFiguretion.
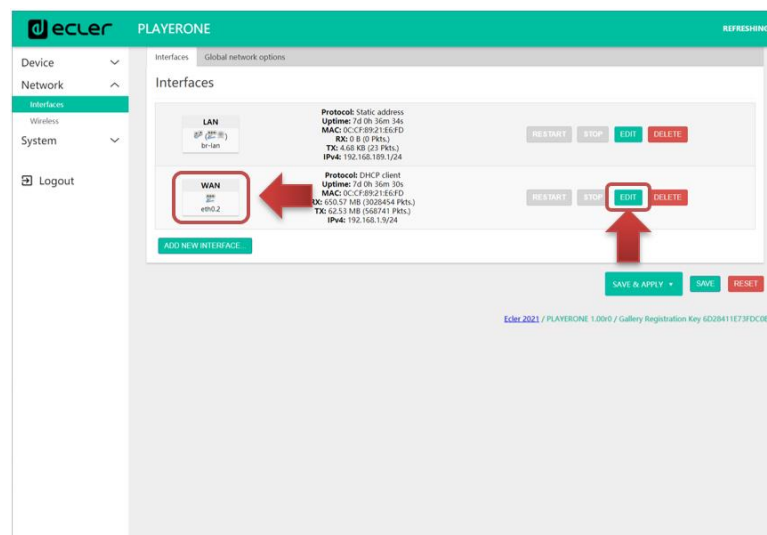


Figure 59 : accessing the network conFiguretion

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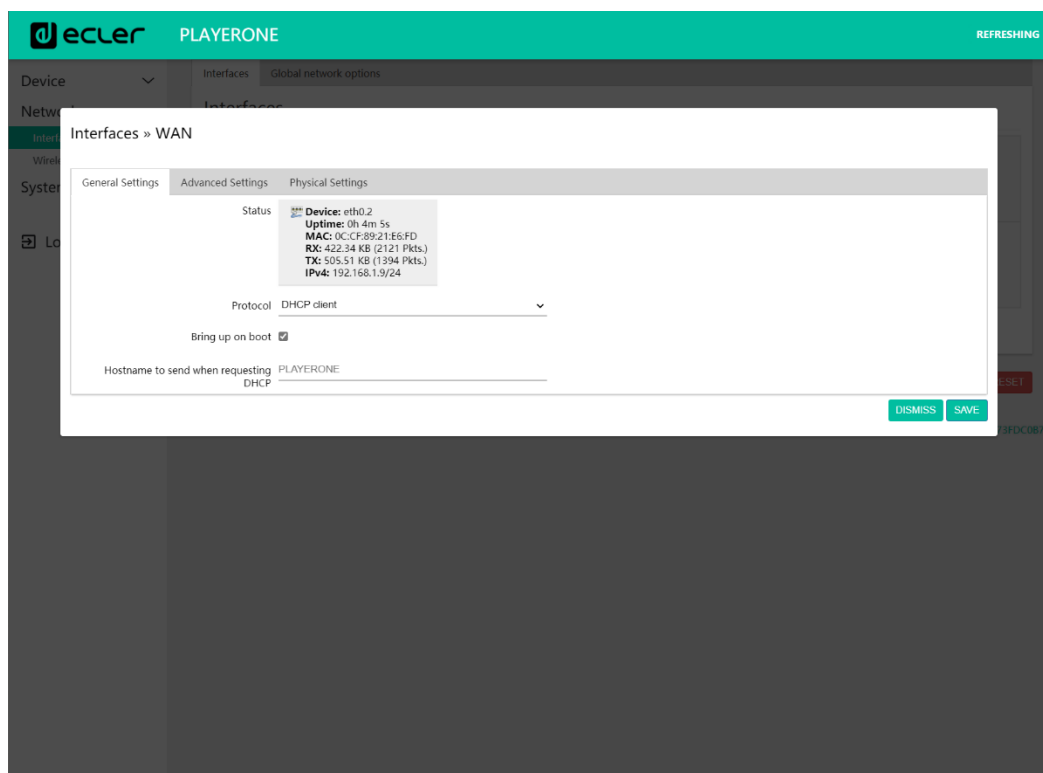
Figure 60: editing network parameters

Select *Static address* mode and press the SWITCH PROTOCOL button to edit the network addressing manually.



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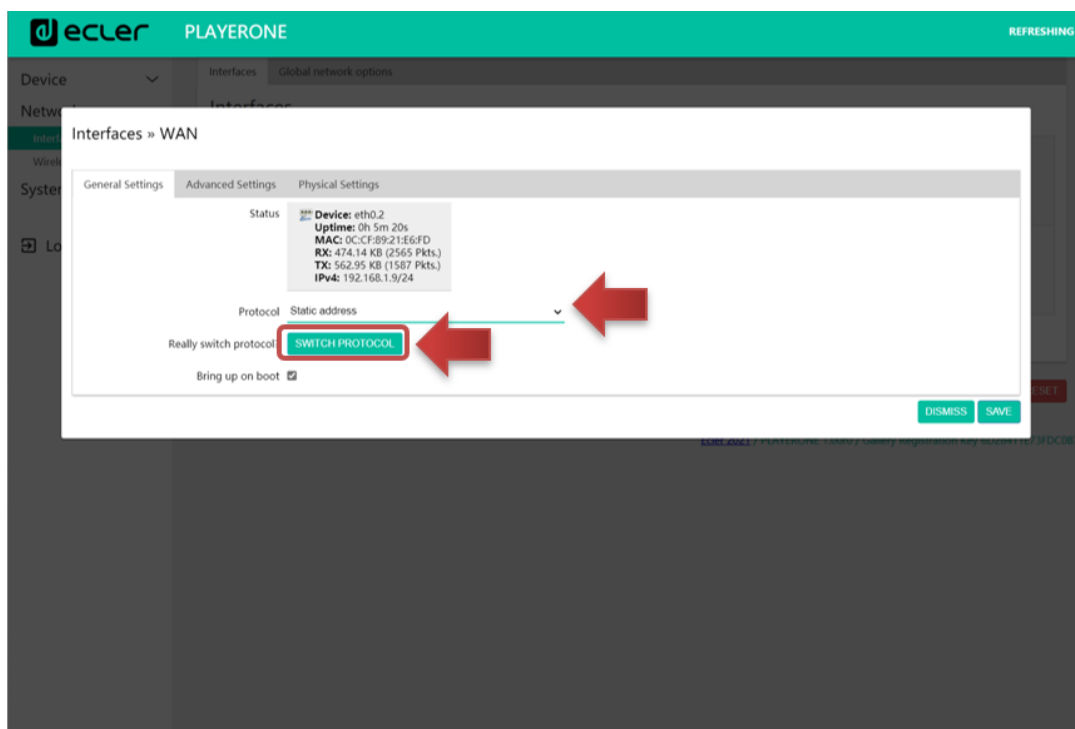
Configure the network parameters according to your infrastructure:
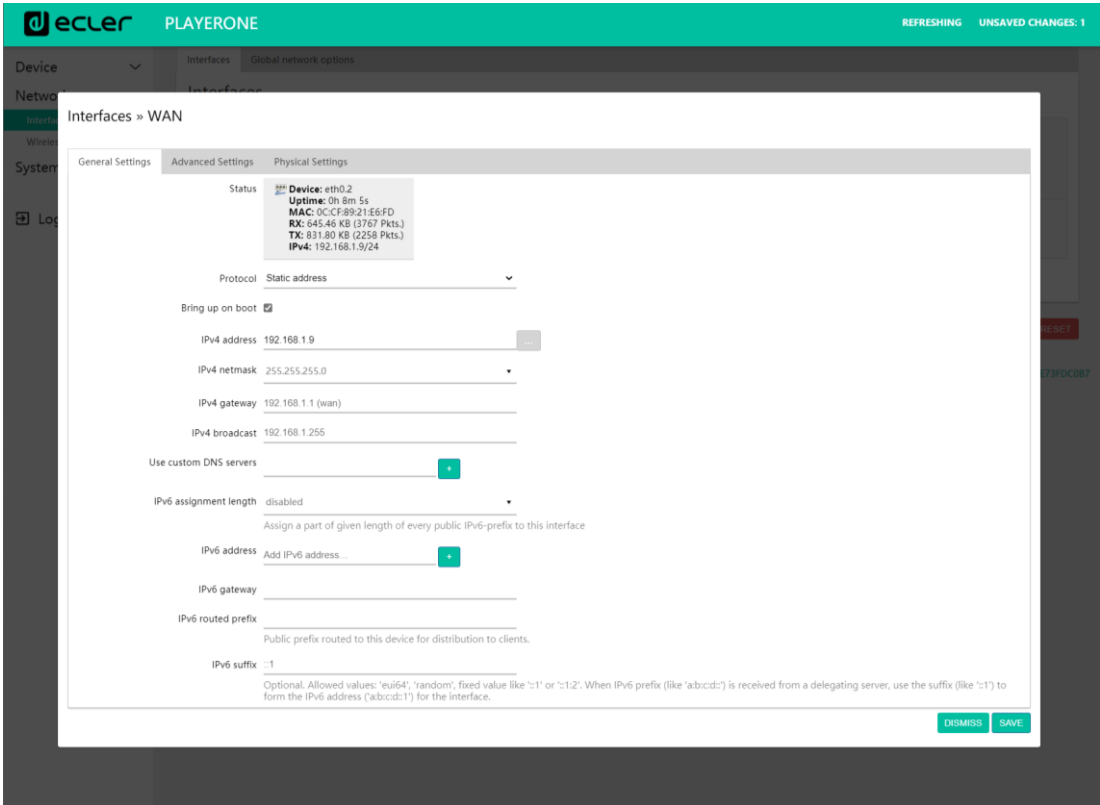


Figure 62

- **IPv4 address**: device network address
- **IPv4 netmask**: subnet mask
- **IPv4**: gateway (switch/router with Internet access)
- **DNS1**: Domain Name System 1 (optional)
- **DNS2**: Domain Name System 2 (optional)

Save the changes on the Edit page, and apply them on the Network/Interfaces page.

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## 7.3.2 POINT-TO-POINT WIRELESS CONNECTION

PLAYER ONE/PLAYER ZERO can establish a point-to-point wireless connection with a WiFi interfaced device (PC, *smartphone*, *tablet*, etc.), either for accessing the web application or for *streaming* via AirPlay/DLNA.

Make sure that the wireless connection is enabled and the device is set to MASTER (Access Point) mode.
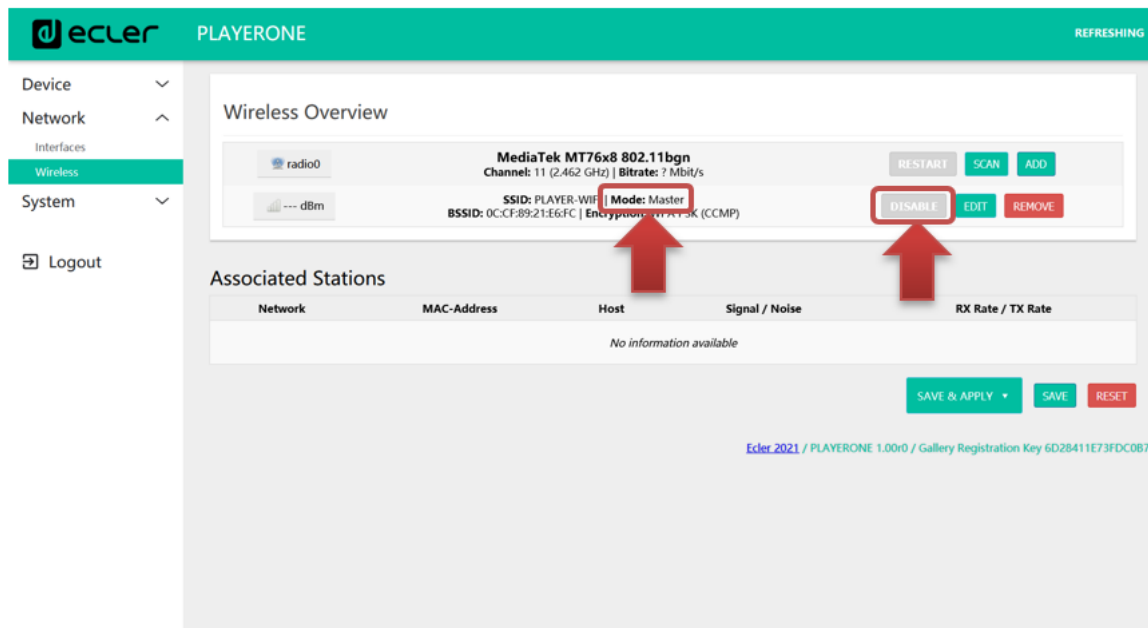


Figure 63: WiFi interface conFiguretion

In your device's WiFi settings, select your device's WiFi network (factory default: PLAYER-WIFI), and enter the password (0123456789). A point-to-point wireless connection will be established.



Figure 64: WiFi settings on a smartphone

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If you have more than one Ecler player in the same system, or you simply want to customize the parameters with which the network is displayed, we recommend changing the SSID and password of the WiFi network of your device(s). To do this, click on the EDIT button and adjust the WiFi network parameters according to your needs. When you have made the changes, save and apply them.
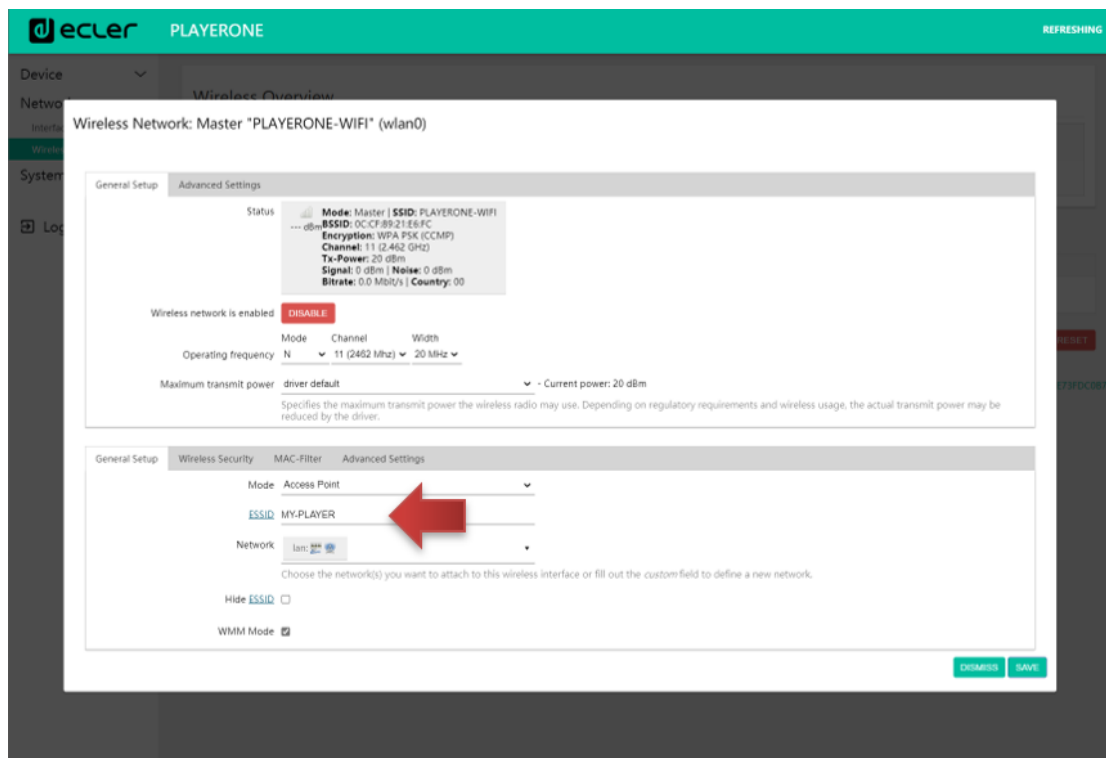


Figure 65: editing WiFi network SSID
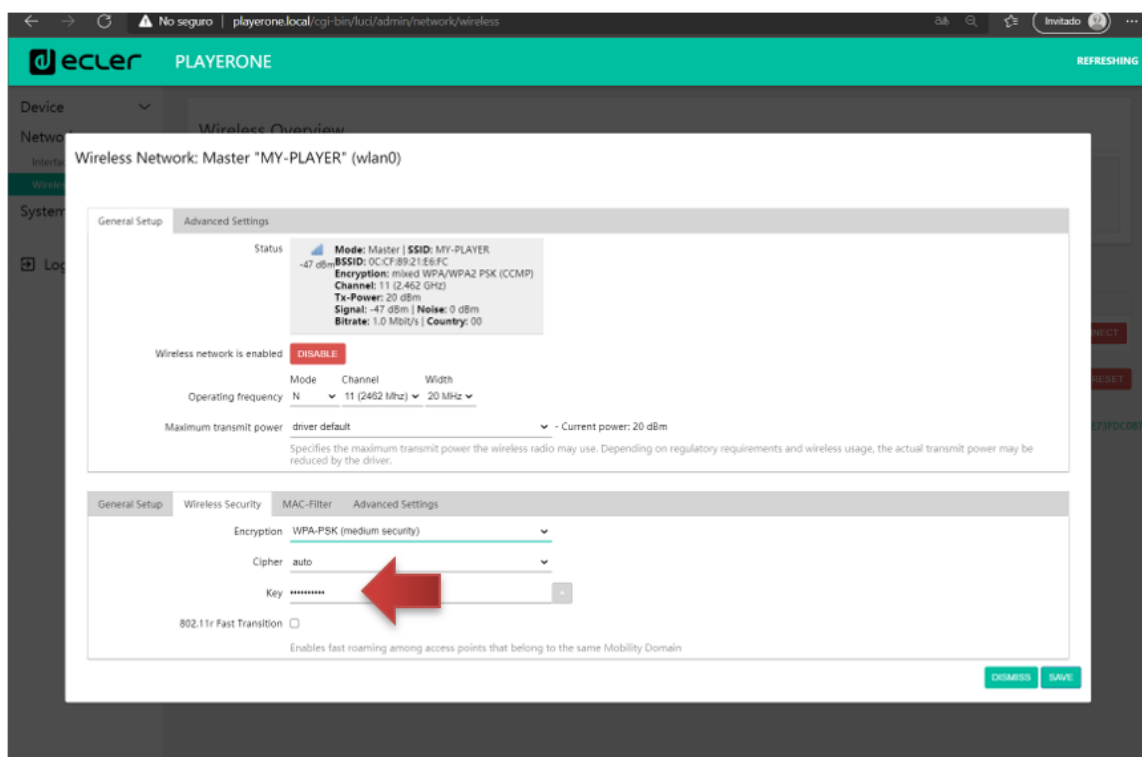


Figure 66: editing WiFi password

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### 7.3.3  CONNECTING TO A WIFI NETWORK

PLAYER ONE/PLAYER ZERO can connect to the Internet via a home WiFi network to access network addresses, such as Internet radios or remote file syncing services.

On the WiFi interface conFiguretion page, click SCAN.
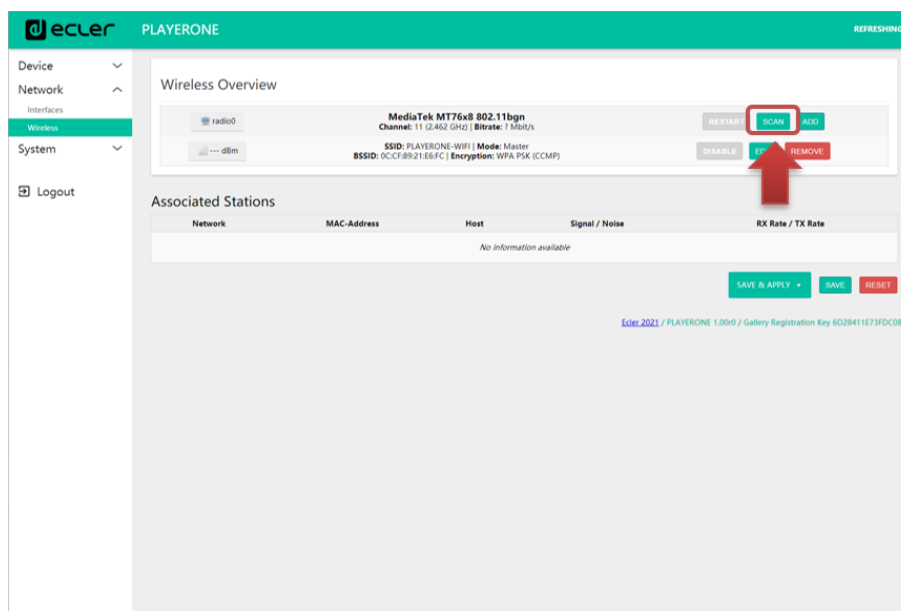


Figure 67

Select your home WiFi network.

*Please Note*: PLAYER ONE/PLAYER ZERO is only compatible with 2.4GHz wireless networks.



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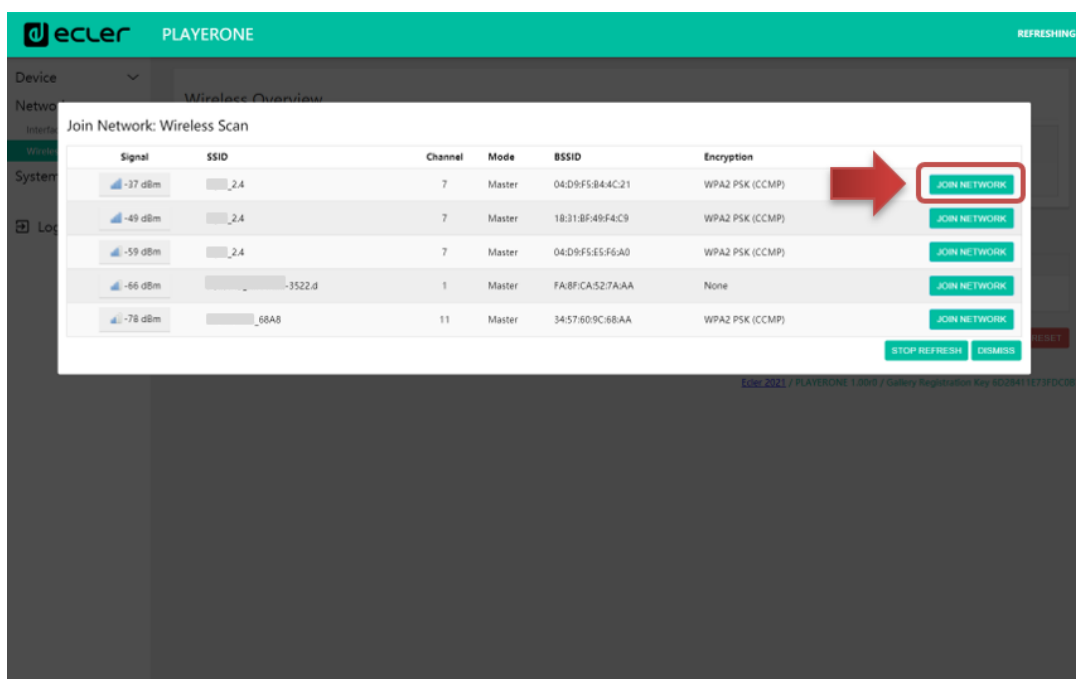
Enter the password of the WiFi network you want to connect to and press the SUBMIT button.
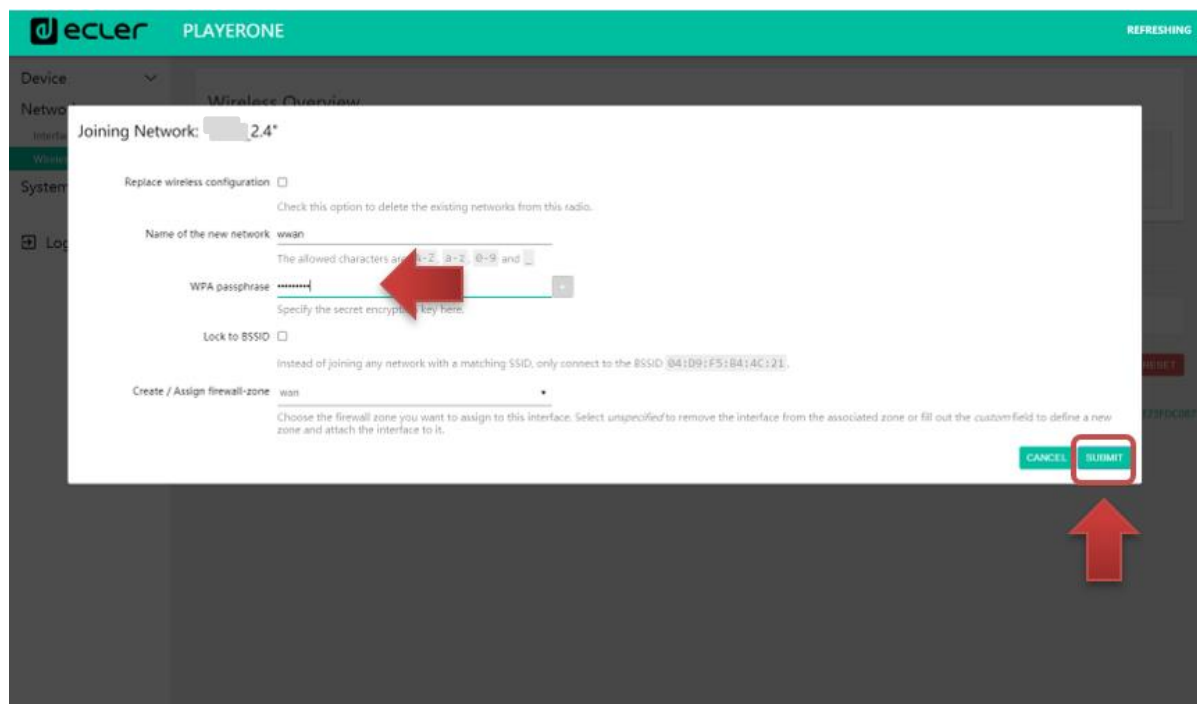


Figure 69

The WiFi network settings are shown below. Press the SAVE button if you do not need to make any additional changes.

*Please Note*: the operating mode has changed to Client.



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A wireless connection to your WiFi network will be established.
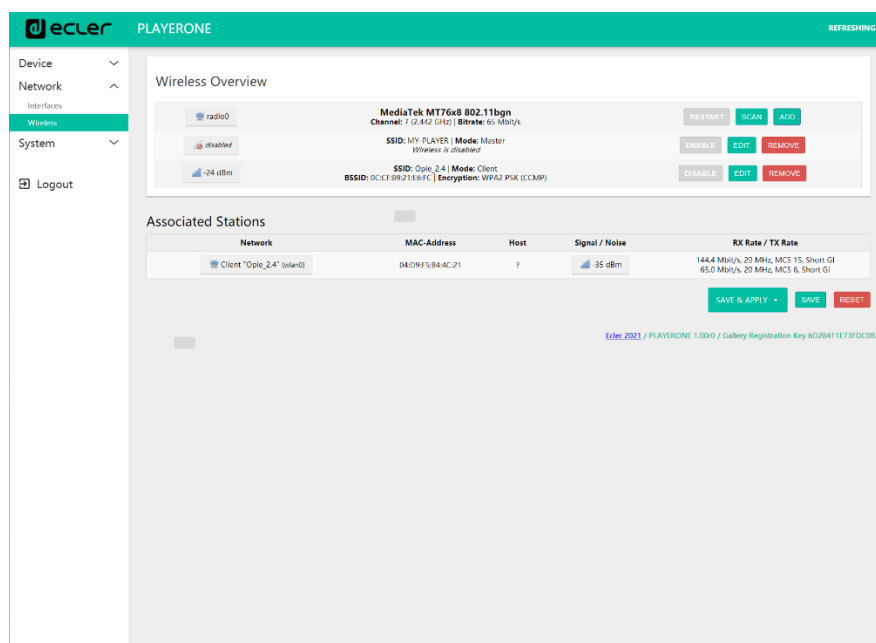


Figure 71

## 7.4  SYSTEM

In the Settings menu you can make changes as an administrator, such as changing the device name, or the password for accessing the web application, or local media encryption, resetting the device to factory settings, saving backups, updating firmware, etc.

### 7.4.1   NAME AND TIME

Device name and time sync settings.
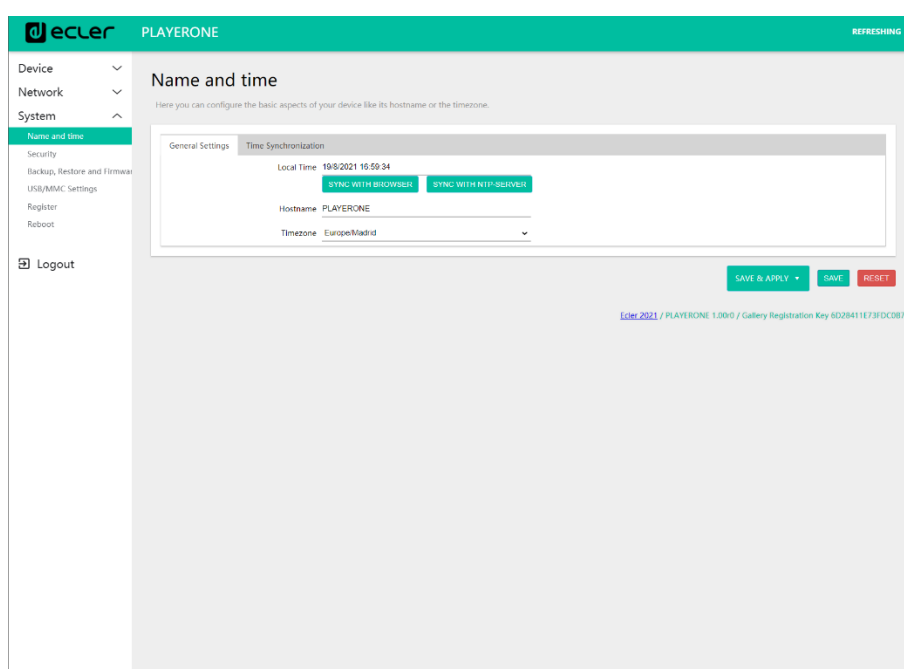


Figure 72: Name and Time, General settings

## 7.4.1.1 GENERAL SETTINGS

- **Local Time**: setting the time on the device. You can sync it with the browser time (Sync with Browser), and/or you can sync it via NTP server: recommended if you have an Internet connection and you are using calendar-triggered events.
  *Please Note*: syncing with an NTP server means you don't have to worry about summer and winter time changes.

- **Hostname**: device name. Name that will be displayed on other services such as AirPlay, RePLAYER control application or mDNS. By default, this is "playerone" for PLAYER ONE and "playerzero" for PLAYER ZERO. Enter "hostname.local/" in your browser's search bar to access the device's web GUI: playerone.local/ or playerzero.local/ by default.

- **Timezone**: setting the time zone. It is important to set this correctly if you are managing calendar events.

## 7.4.1.2 TIME SYNCHRONIZATION
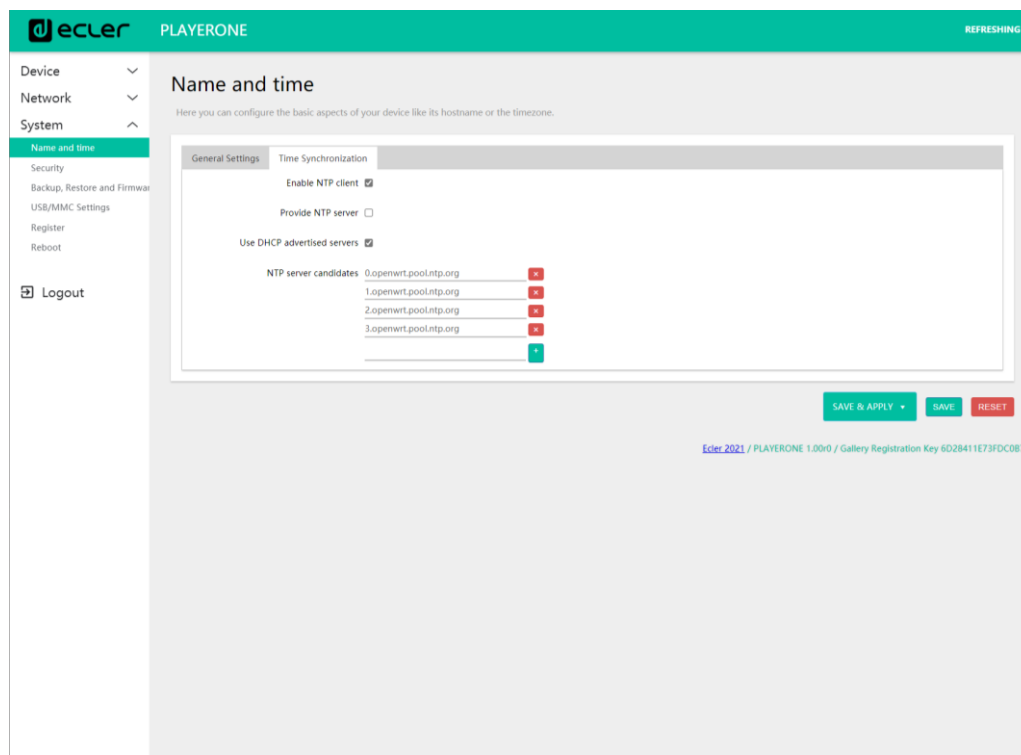


Figure 73: Name and time, Time synchronization

Enable/disable time syncing with an NTP server. This also allows you to manage the candidate servers for syncing.

*Please Note*: PLAYER ONE/PLAYER ZERO has an internal clock that means that you won't lose the time setting if it is not connected to the mains or not synced with an NTP service. However, please note that this clock has an accuracy of ±1 minute/month.
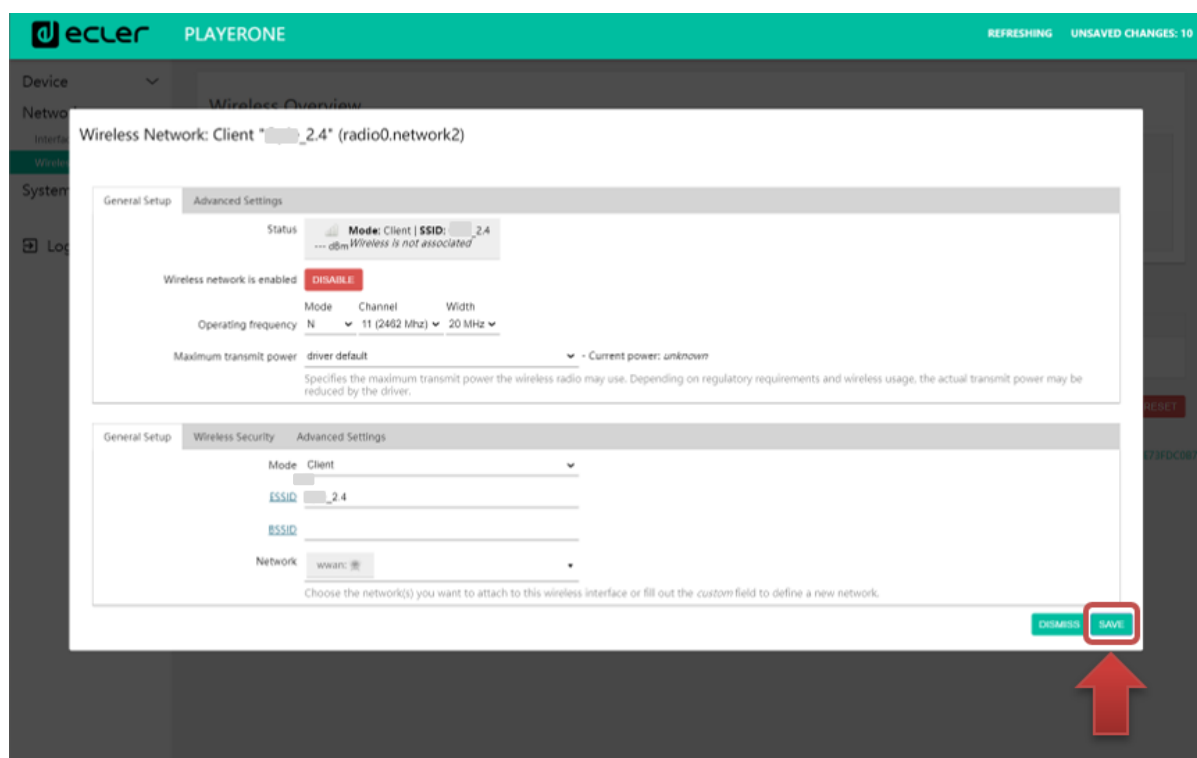
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## 7.4.2   SECURITY

On this page, changes can be made to prevent unauthorized personnel from tampering with the player.

### 7.4.2.1   WEB PASSWORD

Password for accessing the web application. By default, **ecler**.

*Please Note*: the user is always **root**. This cannot be changed.



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## 7.4.2.2 FRONT PANEL FUNCTIONS

Setting the front panel button lock to prevent unauthorised tampering or changing of administrator settings. **O**nly available on PLAYER ONE.
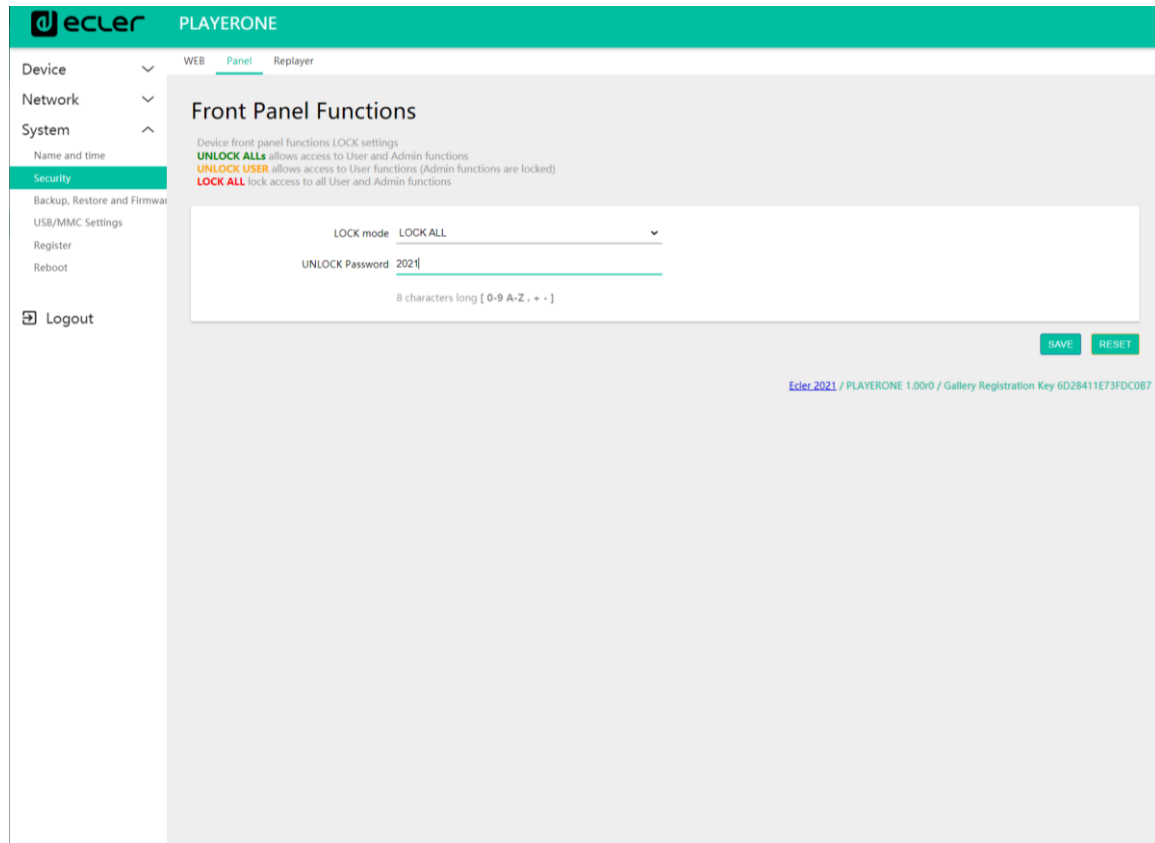
- **LOCK mode**: selection of the lock mode

  o **UNLOCK ALL:** unlocks all buttons on the front panel.

  o **UNLOCK USER**: locks access to the device conFiguretion menu (administrator functions), allowing the use of all other functionalities.

  o **LOCK ALL**: locks all buttons on the front panel.

- **UNLOCK Password:** Password for unlocking. If the device is in lock mode, once you have entered the password, you will have a window of time in which to use the device. After you stop using it, the device will automatically lock the controls again.

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### 7.4.2.3  REPLAYER

4-digit PIN for accessing the device via the RePLAYER control application. Click on this link to find all the information and documentation related to the control application.


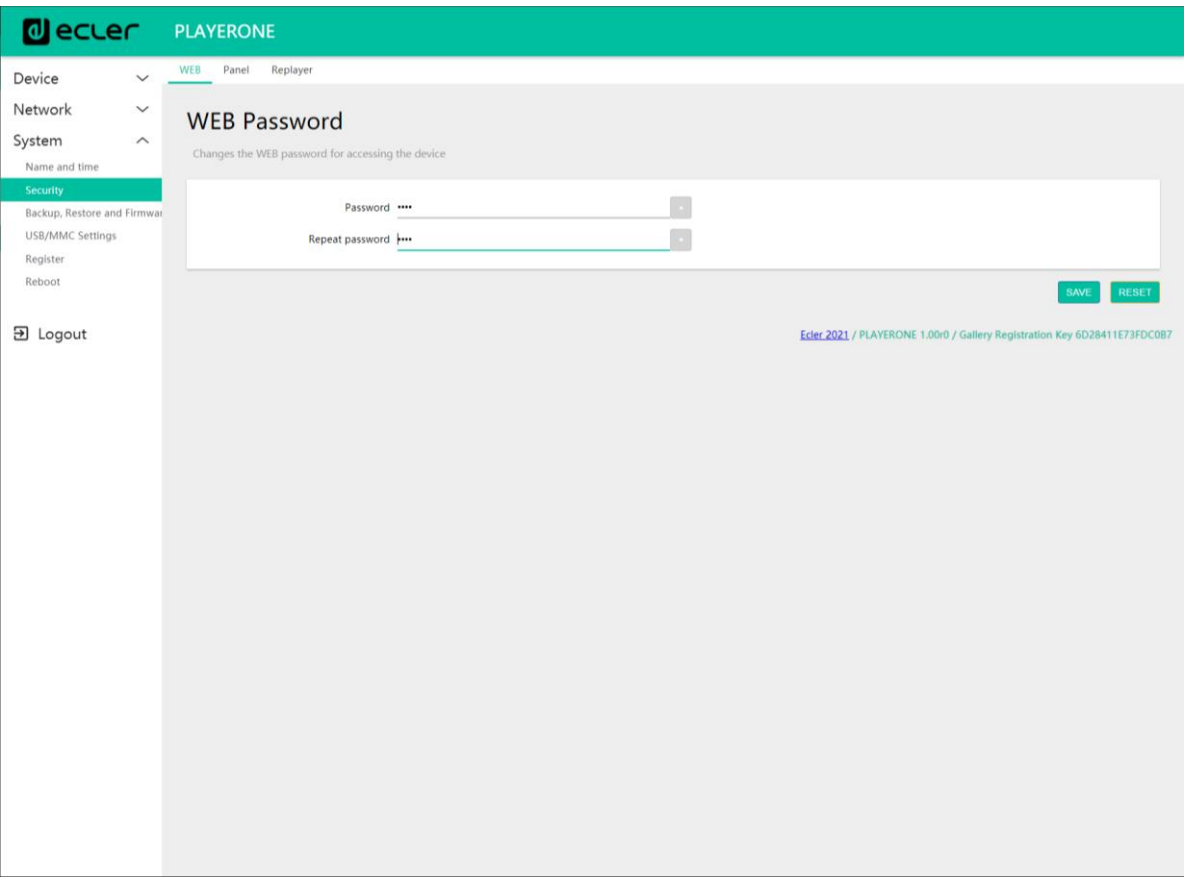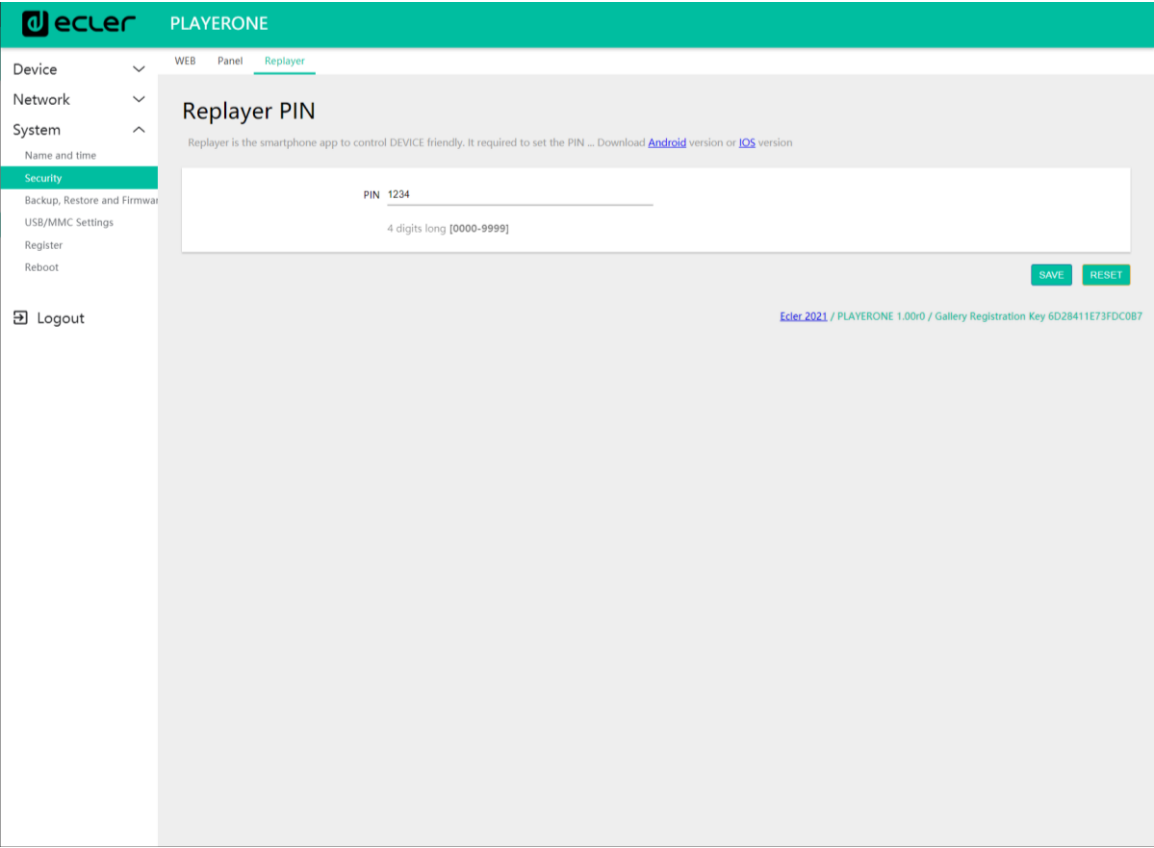
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### 7.4.3 BACKUP, RESTORE AND FIRMWARE

Manage backups of your device and retrieve conFiguretion files, and also update the firmware version.
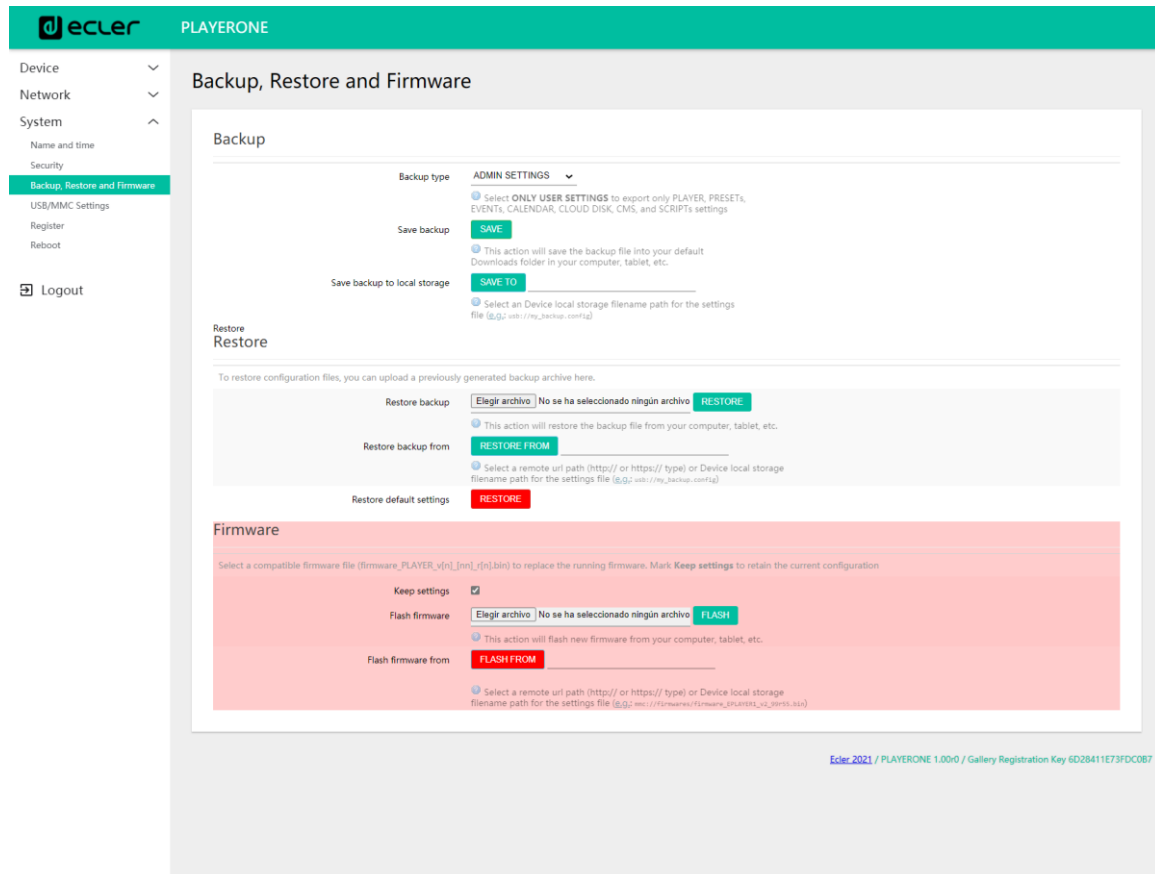


Figure 77: System. Backup, restore and firmware

### 7.4.3.1 MAKE BACKUPS
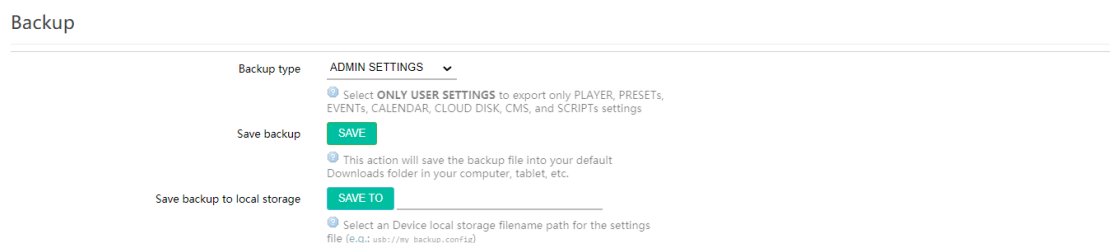


Figure 36: Backup

- **Backup type:** type of backup.
  - o **ADMIN SETTINGS**: saves all settings (both administrator and user settings).
  - o **USER SETTINGS**: only saves the user settings.
  - o **GALLERY SETTINGS**: saves the settings that are compatible with the Ecler Gallery platform.

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| | ADMIN SETTINGS | USER SETTINGS | GALLERY SETTINGS |
|---|:---:|:---:|:---:|
| Player | ✓ | ✓ | ✓ |
| Presets | ✓ | ✓ | ✓ * |
| Calendars | ✓ | ✓ | ✗ |
| Events | ✓ | ✓ | ✓ |
| Scripts | ✓ | ✓ | ✓ |
| Store and Forward | ✓ | ✗ | ✓ |
| Front panel lock settings | ✓ | ✗ | ✗ |
| Network settings | ✓ | ✗ | ✗ |
| System: Name, Time & NTP | ✓ | ✗ | ✗ |
| Player Profile | ✓ | ✗ | ✗ |
| Encryption | ✓ | ✗ | ✗ |
| Web password | ✓ | ✗ | ✗ |

*Partial: no playlist

Figure 78: types of backup or conFiguretion files

- **Save Backup:** generates a backup that will be stored in the download folder which is configured in your browser.
- **Save backup to local storage:** generates a backup that will be saved to the specified local storage address, with the specified name. For example, "mmc://backups/copy1.config" (example of a folder on a uSD card inserted in the player)

### 7.4.3.2 RESTORE BACKUPS AND FACTORY SETTINGS



Figure 79: Restore backup

- **Restore backup:** restores a conFiguretion file (or backup) hosted on your computer, *tablet*, server, etc.
- **Restore backup from:** restores a conFiguretion file hosted on one of the device's storage media, USB or uSD. You can also restore a file hosted in a remote location, URL address.
- **Restore default settings:** restores the device to factory defaults. Administrator and user settings will be lost.

  *Please Note*: if encryption is being used and you restore it to factory settings or restore an administrator file, the content on the storage media will not be able to be recovered.

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### 7.4.3.3 FIRMWARE UPDATE
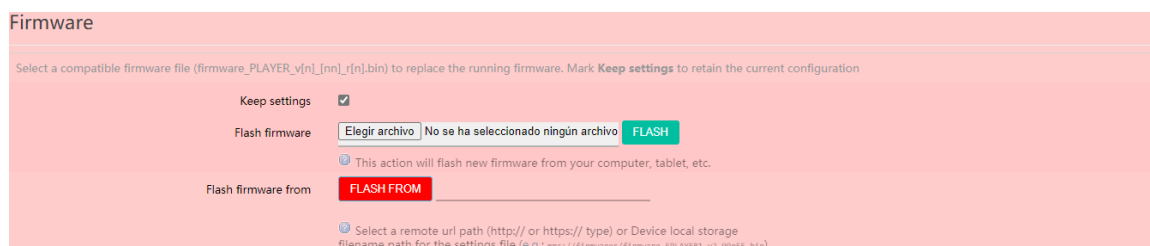


Figure 80: Firmware

- **Keep Settings:** keeps the device's current settings. If you want to return to factory settings after updating the firmware, deselect this box. It is selected by default.
- **Flash Firmware:** updates via a firmware file hosted on your computer, *tablet*, server, etc.
- **Flash Firmware from:** updates via a firmware file hosted on one of the device's storage media, USB or uSD. You can also use a file hosted in a remote location with a URL address.
- 

### 7.4.4 USB/MMC SETTINGS

This allows you to view the space used on the local storage media and manage the encryption function, if desired: for reasons of **security**, data **protection**, to protect the music content stored on the uSD card or USB device, etc. In this way, if the local storage media is removed without authorisation, the data will still be protected, as it will only be readable by the device that encrypted it.
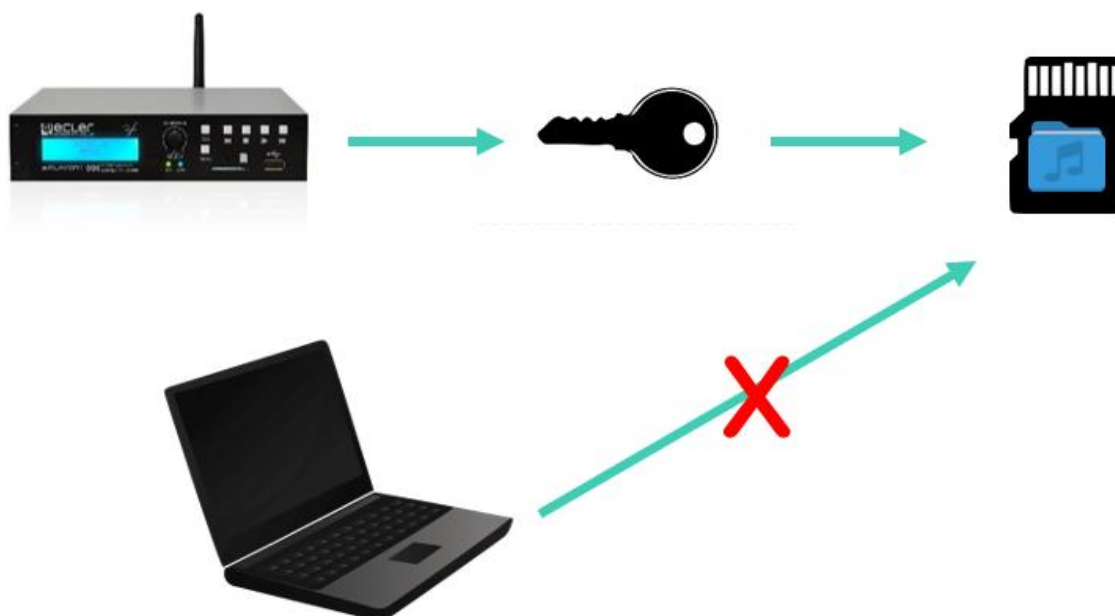


Figure 81: encryption concept

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It **operates** as follows:

1. The device encrypts the media, formatting the external drive. This process **deletes all content** from the memory of the uSD or USB device.
2. This process **may take several minutes**. "FORMATTING..." is displayed on the LCD screen for the duration of the process (PLAYER ONE only).
3. At the end of the process, "NO FILES" will be displayed on the LCD screen, indicating that it has been **formatted correctly** and there are no audio files on the external media (PLAYER ONE only).
4. The external drive is now ready to download content using the **"Cloud disk sync"** tool - **Store and Forward (rsync).**

*Please Note*: once this feature is disabled, if you re-enable it, you will need to restart the process described above.

Some **considerations** with regards to the encryption function:

- The encryption process is **destructive**, as formatting the external drive deletes all the files on it.
- Once this function is enabled, any **other** external **device** (uSD or USB) that is inserted into the corresponding port, and which **does not contain the** encryption keys, **will be encrypted** and therefore all files will be deleted. As a result, it will not be able to play content other than that which is hosted on the media that the device itself has encrypted.
- The external storage media **cannot be read by any other device** (including other PLAYER ONE/PNeeLAYER ZERO) that does not have the encryption keys.
- The content can be read by the device that encrypted it, **as long as** the encryption option **is not changed**. That is, if the encryption function is disabled, the device will stop using this function and therefore will be able to read any external storage media. However, it loses the keys to the previously encrypted external media, and you will therefore not be able to play the content stored on them.

*Please Note*: encryption is a tool that is **designed to be used in conjunction with** content syncing **tool**: "Store and Forward" (rsync). The external storage media, as it is encrypted, cannot be read or written to (copy contents) by any device, such as a computer. Therefore, the only device capable of copying content onto the media is the player that encrypted it. The "Store and Forward" (rsync) tool make this possible.

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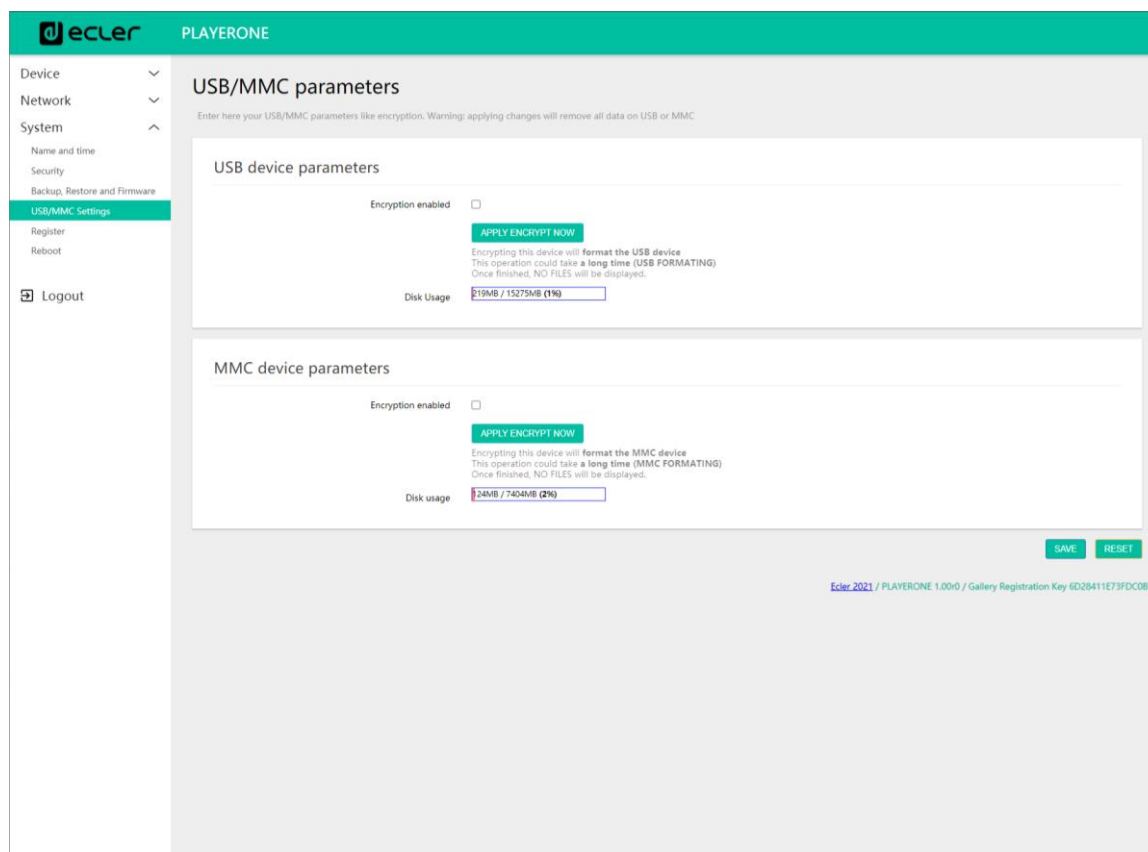
Figure 82: USB/MMC Settings

- **Encryption enabled:** enables/disables media encryption, USB or uSD. If you save this setting, the device will encrypt the disk the next time the drive is mounted, either when the media is inserted or when the device is rebooted.
- **Apply Encrypt now:** immediately encrypts the media.
- **Disk Usage**: capacity of the storage media in MB, and percentage of the storage media that is in use (%), uSD card and USB device respectively. If no media is found, "NO DISK" will be displayed on the LCD screen (PLAYER ONE only)

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## 7.4.5 REGISTER

The **register** allows you to keep a **detailed record of the** device's **activity**. This information can be useful for troubleshooting, monitoring device activity, checking for correct programming, etc.

The **lines in the register** contain information about actions performed by the device, errors and/or announcements, along with time information (when different events occur). The register page displays a list of the register lines reported by the device.

The device register is updated daily, and also when it is rebooted. The previous register lines are deleted. However, a copy of each day's register can be kept on local storage media. This feature allows you to view the register for several days.
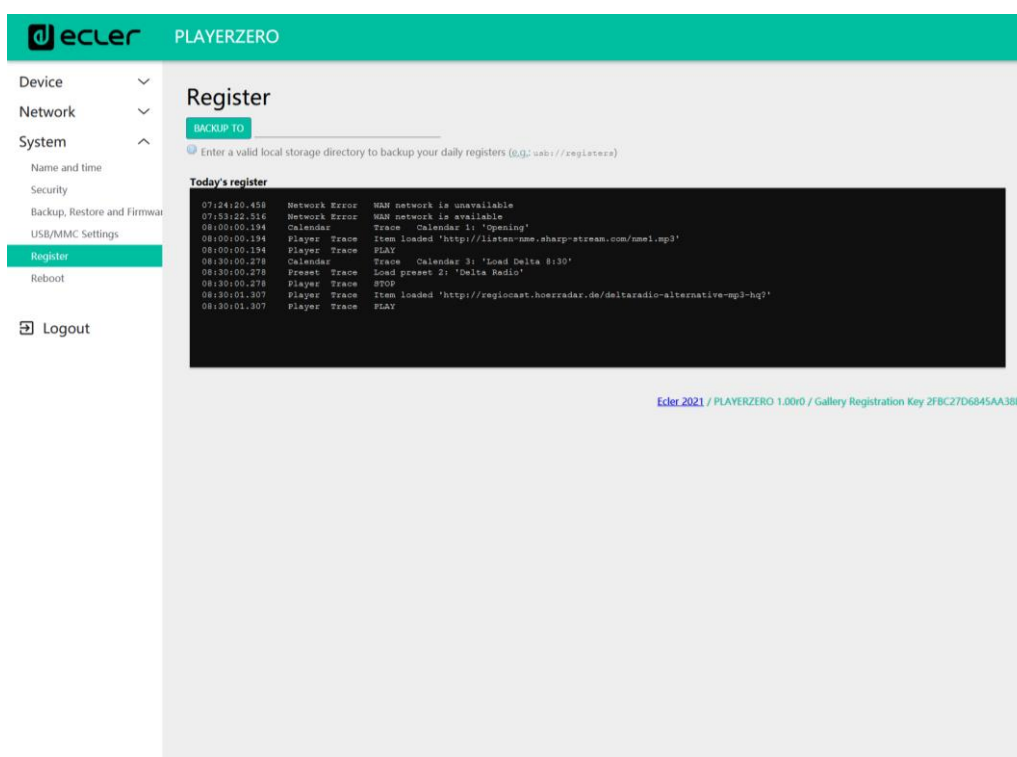


Figure 83: Register

- **Backup to:** allows you to save a copy of the register file for each day to a local storage medium. The path must be specified ("usb://registers", for example).

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### 7.4.6 REBOOT

Allows you to reboot the device from the web application. Click the PERFORM REBOOT button to force the player to reboot.
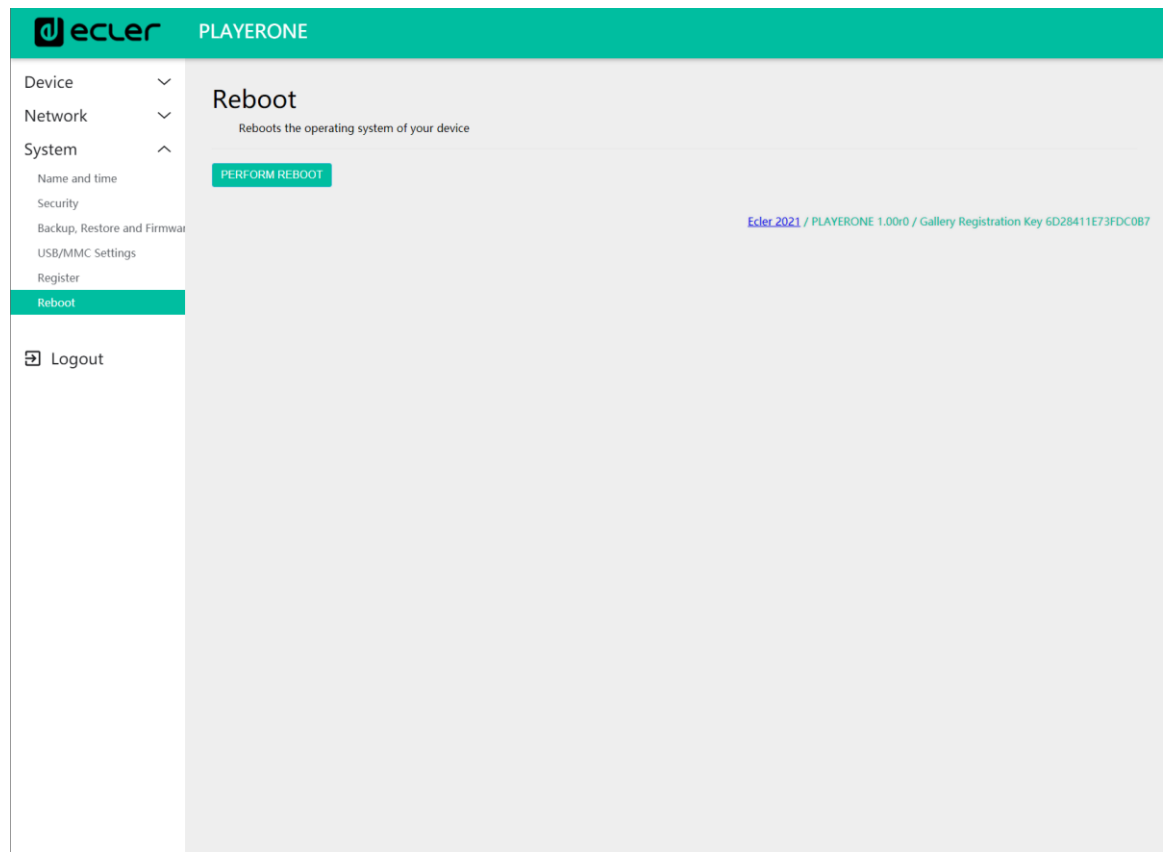


Figure 84: Reboot

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## 7.5 SSH SERVER CONFIGURETION FOR STORE & FORWARD (RSYNC)

The Cloud Disk Sync module, Store and Forward, on the PLAYER ONE/PLAYER ZERO **allows the device to download remote audio content to local storage media (USB/uSD). When active, it daily checks a remote location that hosts audio content, compares this content with the current content stored on its local media (USB/uSD)** and if necessary (if differences are detected), synchronises the local content so that it is an exact copy of the remote content. This is a safe method of playing content with the device during working hours (during the day), storing it on a local media without the risks associated with real-time streaming.

**Store and Forward utility for synchronizing music content remotely uses rsync (Remote Sync) tool for it.**

In this guide, it is shown an example of how to configure a **SSH server using Linux** (Ubuntu Desktop 18.04.2 LTS). It is important, that all machines, server and clients, are connected to the same network (LAN/Intranet).

*Important note*: for configuring Store and Forward cloud-based, would be necessary to hire a VPS (Virtual Private Server) service in order to get a Public IP and access to the SSH server over the Internet.
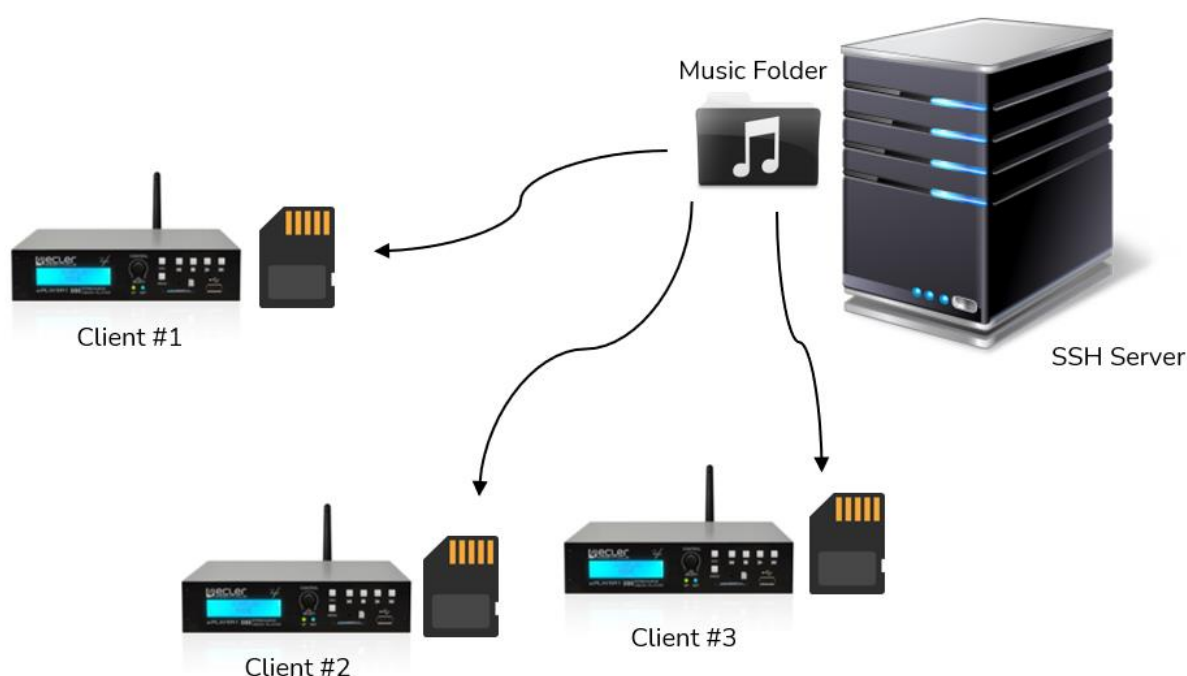


Figure 85: S&F synchronization

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## 7.5.1    CONTENT GROUPS

A **content group is a group if devices that synchronize the same audio content using the Store and Forward utility**. It is necessary to create a different user for each content group. Thus, a device assigned to a content group can access only to the content assigned to that group, and not to other content. This procedure states for security. Each content group will manage its private key to access assigned content in the server that hosts all the music, advertisements, voice messages, etc.

Each content group, or user, can have associated multiple connections at the same time. The maximum number of simultaneous connections will depend on the power of the hardware (server).

So, we will be creating as many content groups, or users on Linux, as contents (music folder e.g.) we want to manage.
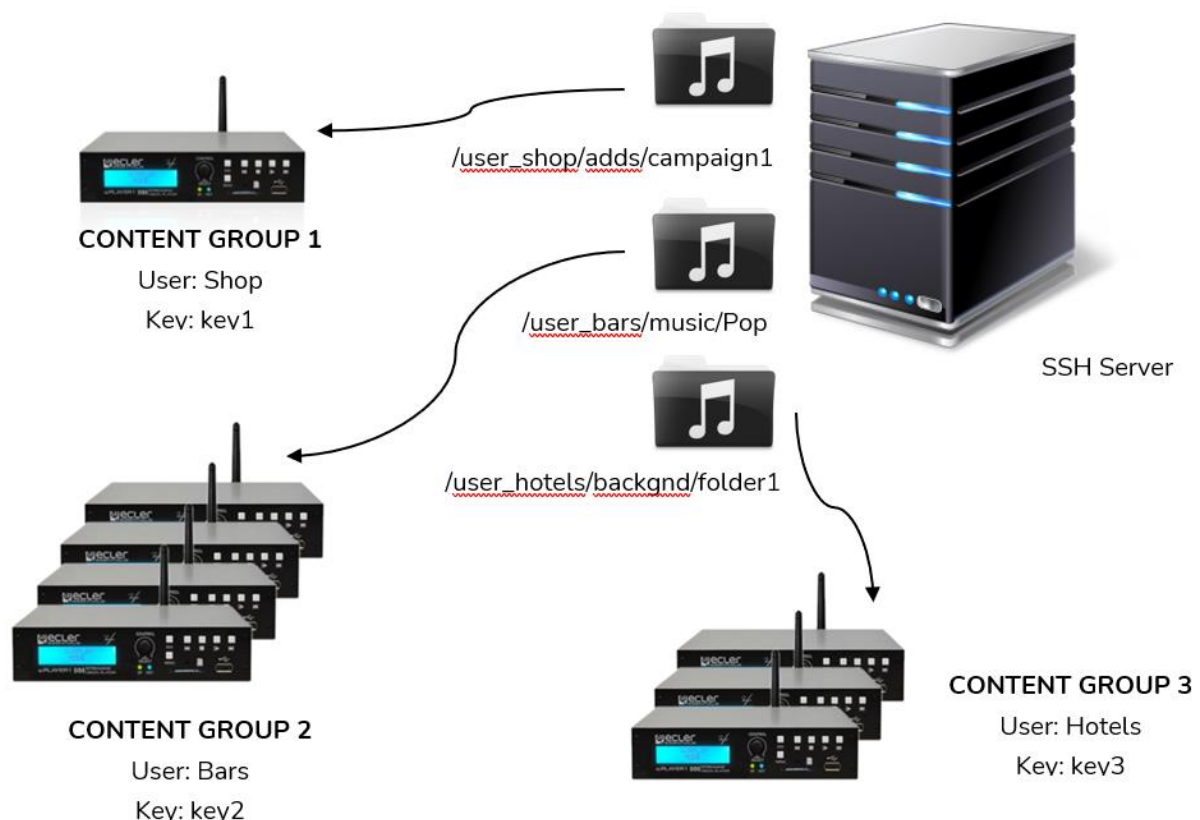


Figure 86: content groups

**For a simple conFiguretion, it is possible to create a single user, so, every device can access to its content using the same user and key. It is skipped security level in this conFiguretion**. A skilled user could configure the Store and Forward using the embedded web server in the player (changing the folder assigned to it), in order to access to any content in the SSH server, since the key is known.

**It is recommended to create a user per content group for professional applications in which the same SSH server hosts content for different companies**. However, if the final user is generating its own content, a single user would be enough.
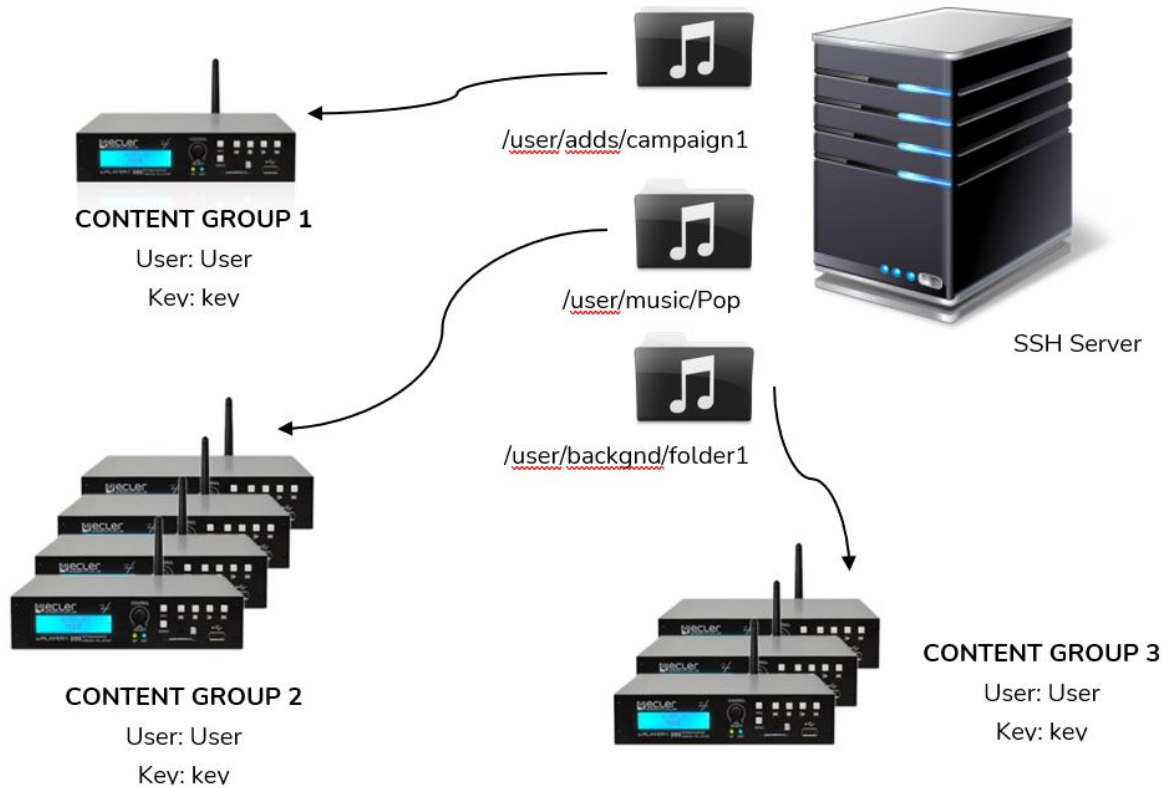


Figure 87: single user

### 7.5.2   INSTALLING SSH ON LINUX

First of all it is necessary to install the SSH package on Linux. Open a terminal and type:

sudo apt-get install ssh

💡   You can open a terminal by using the shortcut {**ctrl + alt + T**}.

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### 7.5.3    CREATING USERS ON LINUX

There will be created as many users as content groups have to be managed. To add a new user, type:

sudo adduser <new_user_name>

Where <new_user_name> stands for the name you want to give to the content group, for example:

sudo adduser hotels


Figure 88
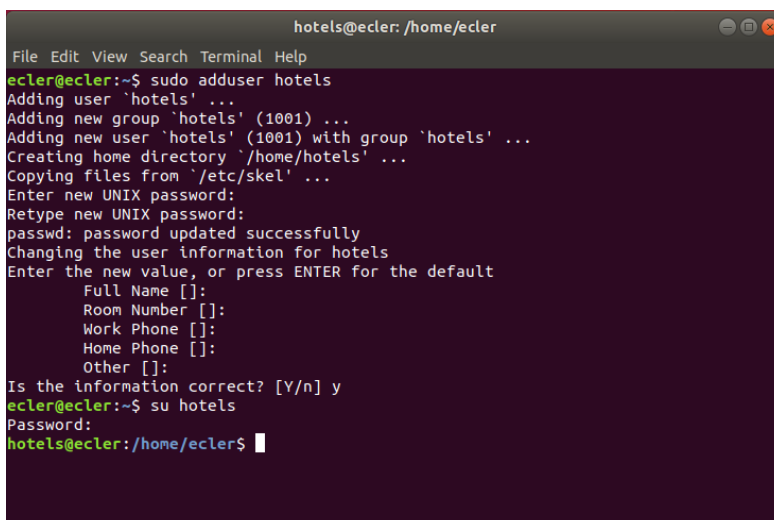
Now, login as the new user:

su <user_name>

And enter the password introduced in the step before.

**In this example:**

su hotels


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### 7.5.4    GENERATING SSH KEYS

Before generating the SSH keys, **it is necessary to go first to the home folder of the new user**. To do this:

cd

Then use the following command to generate the keys and press enter to each question showed up:

ssh-keygen -m PEM



Figure 90

Add the public keys to the authorized keys. Use the following command:

cat .ssh/id_rsa.pub >> .ssh/authorized_keys

Display the private key you will need to introduce in the PLAYER's Store and Forward conFiguretion page:

cat .ssh/id_rsa



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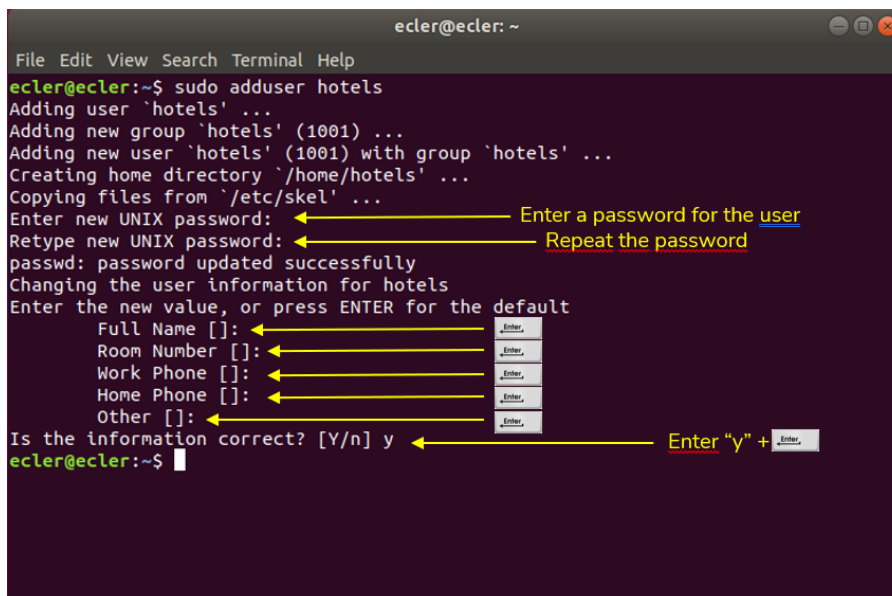**Newer Linux versions have out-dated the RSA algorithms** used by PLAYERs.

PLAYER Store & Forward LOG **will display an error message** as follows:

```
General    Remote Source    Local Target    Log

Key is a ssh-rsa key
Wrote key to '/tmp/saf-dropbear.key'
username=Tech-Support
hostname=192.168.0.67
timeout=25
port=22
source=/home/documents/bgm
target=/media/usb/

ssh: Connection to Tech-Support@192.168.0.67:22 exited: No matching algo hostkey
rsync: connection unexpectedly closed (0 bytes received so far) [Receiver]
rsync error: error in rsync protocol data stream (code 12) at io.c(226) [Receiver=3.1.3]
```

Due to that, the **server configuration must be modified** to allow PLAYER RSA running.

**To quick solve this, we recommend you use the following command in the server terminal:**

sudo sh -c 'echo "HostKeyAlgorithms +ssh-rsa" >> /etc/ssh/sshd_config'

sudo sh -c 'echo "PubkeyAcceptedAlgorithms=+ssh-rsa" >> /etc/ssh/sshd_config'

sudo systemctl restart sshd

### 7.5.6 ADDING AUDIO CONTENT TO THE SSH SERVER

The next step is to place the correct audio content in the SSH server for each specific user or content group. Thus, it will be created a folder inside the home directory of each content group:

<p style="text-align:center;">sudo cp –r &lt;path_with_content&gt; &lt;path_to_place_it&gt;</p>

In this example, it will be copied the audio content in directory

<p style="text-align:center;">sudo cp –r /home/ecler/sandf/hotels /home/hotels</p>

Notice that in directory /home/ecler/sandf/ it is storage all the different audio content, for each content group or user, organized in folders.
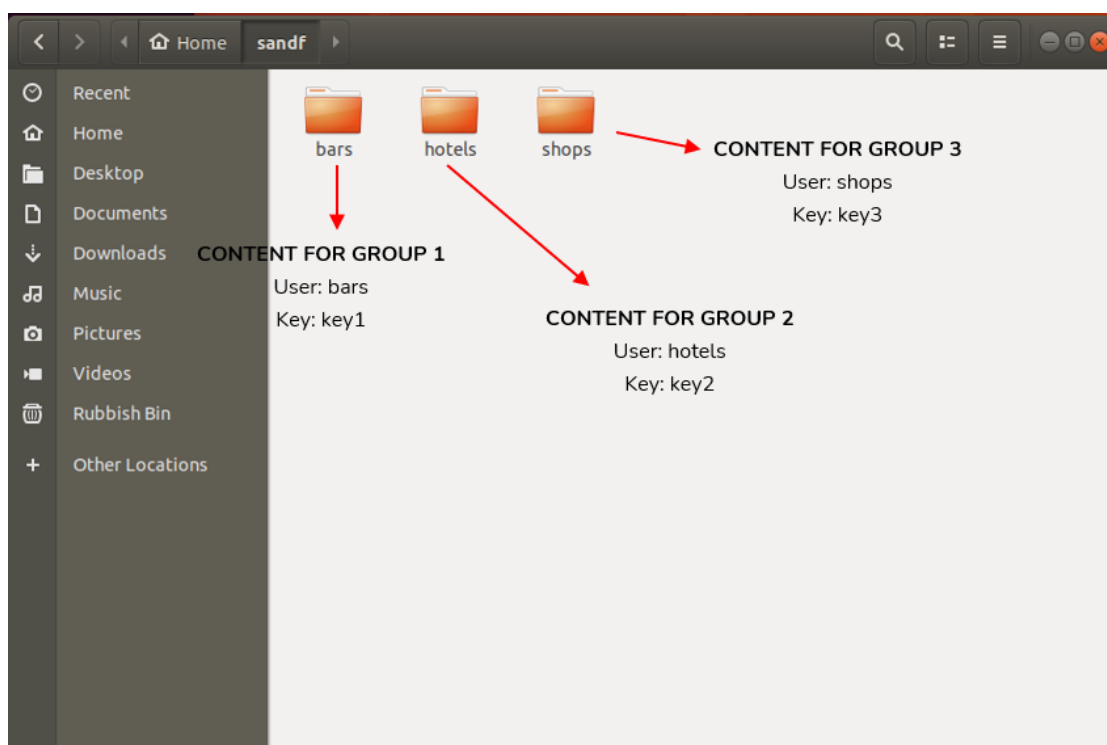


<p style="text-align:center;">Figure 92</p>

Copy the new directory created /home/hotels/hotels. It is the folder where audio contents are storage in the host and need to be copied into PLAYER ONE/PLAYER ZERO S&F's conFiguretion page.

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### 7.5.7 CONFIGURIND THE REMOTE SOURCE IN THE PLAYER

Finally, it can be configured the remote source (SSH server) in the S&F application.

- **Host:** is the IP of the SSH server. To check it you can type on the Terminal:

ifconfig



Figure 93

- **Port:** Port of the SSH server. 22 (by default)
- **Folder**: the directory inside the SSH server with the audio content to sync
- **Username:** user or name of content group
- **Private key:** key generated for the user or content group
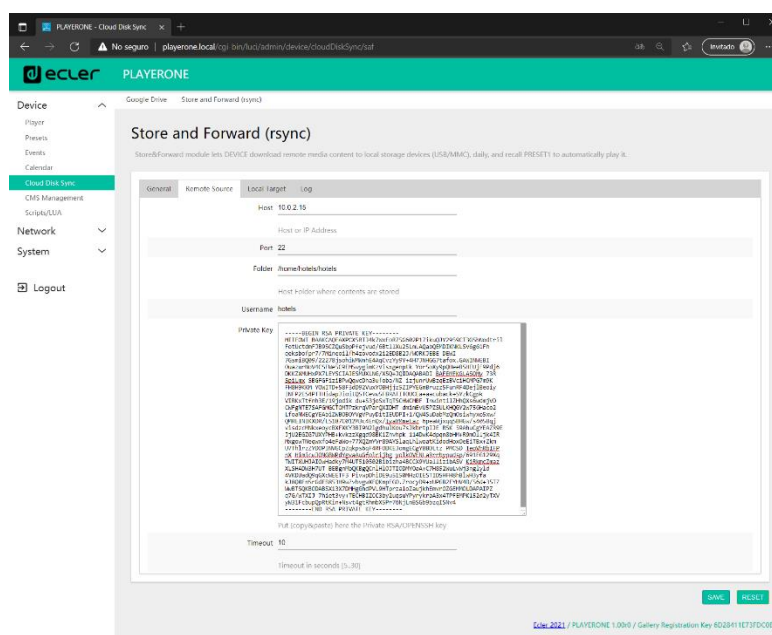


Figure 94

**This conFiguretion is the same for every device in the content group**.

Repeat steps 3 to 6 for every content group you want to configure for Store & Forward.

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# THIRD-PARTY CONTROL PROTOCOL

*PLAYER ONE- JSON Commands*

# USER MANUAL

## 8.  TP-CONTROL PLAYER JSON Commands PRODUCT OVERVIEW

**JSON (JavaScript Object Notation) is a lightweight data-interchange format that allows PLAYER ONE to communicate with third-party devices and platforms**, such as EclerNet Manager. JSON is a text format that is completely language independent but uses conventions that are familiar to programmers of the C-family of languages. Visit the official website for more information: https://www.json.org

- The communication with can be established using Ethernet or WiFi and the TCP/IP transport protocol, always by means of the **2003 TCP port**.
- To check IP address, hold ENTER button for 2-3 seconds to enter admin menu.
- To let some control systems (like CRESTRON®, EXTRON®, AMX®, RTI®, VITY®, MEDIALON®, etc.) process the messages more easily, PLAYER ONE allows to the end of each message with a CR (**\n**) -line feed, character 10-.
- All commands answer {"result":true} (success) or {"result":false} (something failed)

### 8.1  PLAYER COMMANDS

SET PLAYER STEREO/MONO

*Mono mode*
```
{"jsonrpc":"2.0","method":"Player.Stereo","Stereo":false}
```
*Stereo mode*
```
{"jsonrpc":"2.0","method":"Player.Stereo","Stereo":true}
```

SET PLAYER FADE

*No fade*
```
{"jsonrpc":"2.0","method":"Player.Fade","Fade":0}
```
*Cross Fade*
```
{"jsonrpc":"2.0","method":"Player.Fade","Fade":1}
```
*Fade*
```
{"jsonrpc":"2.0","method":"Player.Fade","Fade":2}
```

SET PLAYER MODE

*Player mode Sequential*
```
{"jsonrpc":"2.0","method":"Player.Mode","PlayMode":0}
```
*Player mode Random*
```
{"jsonrpc":"2.0","method":"Player.Mode","PlayMode":1}
```

SET PLAYER REPEAT

*Play all*
```
{"jsonrpc":"2.0","method":"Player.Repeat","Repeat":0}
```
*Play one*
```
{"jsonrpc":"2.0","method":"Player.Repeat","Repeat":1}
```

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*Repeat all*
```
{"jsonrpc":"2.0","method":"Player.Repeat","Repeat":2}
```
*Repeat one*
```
{"jsonrpc":"2.0","method":"Player.Repeat","Repeat":3}
```

## GET SHORT PLAYER INFORMATION

```
{"jsonrpc":"2.0","method":"Player.GetStats"}
{"title":"Brian Hyland - Sealed With a
Kiss","counter":"19:30","txtSource":"NET","status":1}
```

## GET FULL PLAYER INFORMATION

```
{"jsonrpc":"2.0","method":"Player.GetStatsEx"}
{"title":"Elvis Presley -
Judy","counter":"07:02","txtSource":"NET","status":1,"SourceList":
["","MMC","USB UNAVAILABLE","DLNA","AIRPLAY","JVL
PLAYLIST","MUSICUP"],"source":6,"preset":1,"volume":100,"txtVolume":"0dB",
"stereo":1,"repeat":
2,"playmode":0,"fade":1,"bootpreset1":0,"sp":1,"bitrate":"128","duration":
"--:--","freq":"44.1","playlist_index":" 0006 / 0056"}
```

## PLAYER ADD NEXT PLAYLIST ITEM

With this function user can manage device playlist simply inserting next item before the end of current item.

set next item to "next_item.mp3"
```
{"jsonrpc":"2.0","method":"Player.QueueNextElem","url":"mmc://next_item.mp
3"}
```

## PLAYER INSERT PRORITY ITEM

With this function user can insert a priority item that will be played "over" the actual playing item. Current playing item will be fade.

set next item to "priority_item.mp3"
```
{"jsonrpc":"2.0","method":"Player.PrioritySetElem","url":"usb://priority_i
tem.mp3"}
```

## PLAYER PLAY

If the player is paused or stopped use this function to start current loaded item reproduction, otherwise the player is paused.
```
{"jsonrpc":"2.0","method":"Player.Play"}
```

## PLAYER STOP

```
{"jsonrpc":"2.0","method":"Player.Stop"}
```

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## PLAYER NEXT

```
{"jsonrpc":"2.0","method":"Player.Next"}
```

## PLAYER PREVIOUS

```
{"jsonrpc":"2.0","method":"Player.Prev"}
```

## INCREMENT VOLUME

Increment volume just one dB
```
{"jsonrpc":"2.0","method":"Player.Volume","Action":"inc"}
```

## DECREMENT VOLUME

Decrement volume just one dB
```
{"jsonrpc":"2.0","method":"Player.Volume","Action":"dec"}
```

## SET VOLUME

Param volume is expressed in %. To set volume to 50% use next command.
```
{"jsonrpc":"2.0","method":"Player.Volume","Volume":50}
```
●

## OPEN PLAYLIST URL

Url param must be any valid device url.
```
{"jsonrpc":"2.0","method":"Player.Open","Url":"http://50.7.181.186:8060"}
```

## OPEN PRESET INDEX 10

Preset param must be a valid preset index 1 to 20
```
{"jsonrpc":"2.0","method":"Player.Open","Preset":10}
```

## OPEN SOURCE INDEX 4 AIRPLAY (FROM AVAILABLE SOURCES LIST)

Source must be a valid player source index. Please check "Get of list available sources" to know all valid sources.
```
{"jsonrpc":"2.0","method":"Player.Open","Source":4}
```

## GET LIST OF AVAIABLE SOURCES

This command returns the list of available sources.
```
{"jsonrpc":"2.0","method":"Source.GetList"}
{"SourceList":["","MMC","USB UNAVAILABLE","DLNA","AIRPLAY","ROCK
80s","DISCO
80s"]}
```

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## 8.2 CONFIGURETIONS COMMANDS

### RESET DEVICE SETTINGS

Restore device factory default settings. All your settings will be lost.
```
{"jsonrpc":"2.0","method":"Settings.Reset"}
```

### RESTORE DEVICE SETTINGS FROM URL

Restore device settings to values in url file.
```
{"jsonrpc":"2.0","method":"Settings.Restore","url":"http://ecler.com/my_pl
ayer_config.config"}
```

### BACKUP CURRENT DEVICE CONFIGURETION

Backup device settings to url. Available conFiguretions: user, admin or gallery.
```
{"jsonrpc":"2.0","method":"Settings.Backup","url":"mmc://backups/gim.confi
g","user":"admin"}
```

### GETTING DEVICE VARIABLE VALUE

This function returns a device variable value. Please check the Player LUA manual in order to check all the interface.settings.variable values.

In order to retrieve preset01.settings.bname (preset name) user should send next command to the PLAYER ONE:
```
{"jsonrpc":"2.0","method":"CFG.get","interface":"preset01","section":"sett
ings","variable":"bname"}
```
```
{"value":"AFTERNOON PRESET"}
```

### SETTING DEVICE VARIABLE VALUE

This function set a device variable value. Please check the Player LUA manual in order to check all the interface.settings.variable values.

In order to set preset01.settings.bname (preset name) user should send next command to the PLAYER ONE:
```
{"jsonrpc":"2.0","method":"CFG.set","interface":"preset01","section":"sett
ings","variable":"bname","value":"MIDNIGHT PRESET"}
```

### STORE CHANGES IN DEVICE INTERNAL MEMORY

This function stores all interface variables to the internal device memory. Should be called after set all the changes. PLAYER ONE must reload the data using reload functions.
```
{"jsonrpc":"2.0","method":"CFG.commit","interface":"preset01"}
```

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## 8.3 PRESET COMMANDS

Preset variables for GFG.get and CFG.set. Please check Player LUA manual. Preset variables.

### RELOAD PRESET

Reload indicated preset index. Index should be a valid preset index 1..20. Must be called after modifiying preset variables and call commit command
```
{"jsonrpc":"2.0","method":"Preset.Reload","Index":1}
```

## 8.4 EVENT COMMANDS

Event variables for GFG.get and CFG.set. Please check Player LUA manual. Event variables.

### RELOAD EVENT

Reload indicated event. Name should be: GPI1, GPI2 or SILENCE. Must be called after modifying event variables and call commit command.
```
{"jsonrpc":"2.0","method":"Event.Reload","Name":"GPI1"}
```

## 8.5 CALENDAR COMMANDS

Calendar variables for GFG.get and CFG.set. Please check Player LUA manual. Preset variables

### RELOAD CALENDAR

Reload indicated calendar. Calendar index should be a number 1..24. Must be called after modifying calendar variables and call commit command. Reload calendar 24 example:
```
{"jsonrpc":"2.0","method":"Calendar.Reload","Index":24}
```

## 8.6 STORE AND FORWARD COMMANDS

SAF variables for GFG.get and CFG.set. Please check Player LUA manual. SAF variables

### RELOAD SAF

Reload SAF conFiguretion. Must be called after modifing SAF variables and call commit command.
```
{"jsonrpc":"2.0","method":"SAF.Reload"}
```

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## 8.7  SCRIPT COMMANDS

Script variables for GFG.get and CFG.set. Please check Player LUA manual. Script variables.

### RELOAD SCRIPT

Reload script conFiguretion. Index should be script index 1 to 20. Must be called after modifying Script variables and call commit command. Reload script 7 example:

```
{"jsonrpc":"2.0","method":"Script.Reload","Index":7}
```

### EXECUTE SCRIPT 6

```
{"jsonrpc":"2.0","method":"Script.Command","Index":6,"Command":"Start"}
```

### KILL SCRIPT 3

```
{"jsonrpc":"2.0","method":"Script.Command","Index":3,"Command":"Stop"}
```

### QUERY SCRIPT 11 STATUS

```
{"jsonrpc":"2.0","method":"Script.Status","Index":11}
{"status":"Idle"}
```

## 8.8  REGISTER COMMANDS

### ADD REGISTER LINE

Add line to device LOG. Possible line values are: Trace, Warning, Error.
Add a warning line example:

```
{"jsonrpc":"2.0","method":"Device.Log","Severity":"Trace","Message":"This is
a warning message"}
```

## 8.9  DEVICE COMMANDS

### DEVICE REBOOT

```
{"jsonrpc":"2.0","method":"Device.Reboot"}
```

### GET DEVICE VERSION

```
{"jsonrpc":"2.0","method":"Device.GetVersion"}
{"version":"3.04r0"}
```

### DEVICE UPDATE FIRMWARE

With this function user could update device firmware to an specific version. User must provide firmware url. Device setting will be saved.

```
{"jsonrpc":"2.0","method":"Device.Update","url":"https://www.ecler.com/new_f
irmware.bin"}
```

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## DEVICE BOOT CONFIG COMMAND

Available BootPreset1 options are: 1 – PRESET1, 2 – keep status
`{"jsonrpc":"2.0","method":"Device.BootPreset1","BootPreset1":2}`

## DEVICE GET MAC

`{"jsonrpc":"2.0","method":"Device.GetMac"}`
`{"mac":"32 41 41 20 40 42"}`

## DEVICE GET GALLERY REGISTRATION KEY

`{"jsonrpc":"2.0","method":"Device.GetRegkey"}`
`{"regkey":"2E1BB146B2DB2WA1"}`

## 8.10  PANEL COMMANDS

## PANEL SET LOCK SETTINGS

Set panel Lock to "UNLOCK ALL" "UNLOCK USER" "LOCK ALL". Set panel password to
Pass.
`{"jsonrpc":"2.0","method":"Device.Panel","Lock":"LOCK ALL","Pass":"1234"}`

## PANEL GET LOCK SETTINGS

`{"jsonrpc":"2.0","method":"Device.GetPanel"}`
`{"Lock":"UNLOCK ALL","Pass":""}`

## FINDER COMMANDS

Start/stop finder operation
`{"jsonrpc":"2.0","method":"Device.Finder","Finder":true}`

## LCD FUNCTIONS

Print text on device frontal display. Two lines are available and aligned centre if Centre
variable is true. Is possible to specify the display timeout in seconds.
`{"jsonrpc":"2.0","method":"Device.Print","Line1":"Hi","Line2":"Bye","Cent`
`er":true,"Timeout":3}`

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## 9. PLAYER LUA SDK Introduction

PLAYER is a Lua extension library that acts as interface between LUA and PLAYER firmware using the well-known PLAYER JSON protocol.

Basically is composed by different kind of objects:

- PLAYER – access player functions.
- CFG – access conFiguretion. With this object you can access all the PLAYER conFiguretion.
- PRESET – PRESET settings. There are 20 presets that act as memories where you can store all the PLAYER player settings like url, play mode, repeat mode, fade mode, etc.
- EVENT – Event conFiguretion lets PLAYER execute automated functions. There are 3 possibilities GPI1, GPI2 and SILENCE settings.
- CAL – Calendar conFiguretion lets PLAYER execute automated functions on date event. There are up to 24 different calendar.
- SAF – Store and Forward settings.
- SCRIPT – Manage PLAYER scripts. Is possbile to execute scripts based on different kind of triggers like BOOT, EVENT, LOAD PRESET, CALENDAR, NETWORK, etc.
- LOG – Register functions that allows the user to write to the PLAYER internal REGISTER.
- DEV – Device status and other setups (like install new firmwares).
- PANEL – Panel lock mode settings and status.
- FINDER – use FINDER settings to discover your PLAYER.
- LCD – Allow access to PLAYER LCD display.

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## 9.1 PLAYER LUA SDK V1.02

### 9.1.1 CHANGELIST

- **v1.02 – xxxx/xx/xx**

  ✔ Added DEV_reboot function

  ✔ Added CFG_backup2 function with type parameter: user, admin and gallery

  ✔ Bug fix CFG_backup was calling to Device.Backup instead Settings.Backup

  ✔ Typo, Calendar general_enabled changed to bEnabled

  ✔ Typo, Scripts enabled change to bEnabled

- **v1.01 – 2018/03/14**

  ✔ Added DEV_mac function

  ✔ Added DEV_regkey function

- **v1.00 – 2018/02/08**

  ✔ First version of the document also named "Preliminary version"

## 9.2 HOW TO USE PLAYER MODULE

In order to use PLAYER module you must include it in your source code using require statement. PLAYER automates this function for you, but you can also include PLAYER module manually and create your PLAYER object as you need using the next two lines of code:

```
require "PLAYER"
mydev = PLAYER.new()
```

In this case you can program actions directly to your PLAYER device, but also it is possible to access PLAYER directly from your PC (in this case it is recommended to use some LUA development tool like Eclipe/LUA)

If you want to use PLAYER directly from your PC you can call "new" function with IP and PORT parameters as shown next:

```
require "PLAYER"
mydev = PLAYER.new("10.120.120.4", 2003)
```

Where 10.120.120.4 is the PLAYER IP address, that you can check by pressing ENTER button for 10 seconds and going to WIFI or ETHERNET menu. 2003 is the JSON port.

One time PLAYER object is created is possble to access all functions in it.

**Let see what you can do.**

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### 9.2.1    CONVENTIONS

- **n** indicates number
- **b** indicates Boolean
- **txt** indicates text

### 9.2.2    PLAYER FUNCTIONS

Access player functions like repeat, fade, etc.

**Functions**

Function:
```
PLAYER_stereo(bStereo)
```
Description:
    Set the player output mode to stereo or mono
Parameters:
    *bStereo – boolean*, set to true for stereo output, otherwise mono output is selected

Function:
```
PLAYER_fade(nFade)
```
Description:
    Set the player fade mode
Arguments:
    *nFade – integer* 0-OFF, 1-XFADE, 2-FADE

Function:
```
PLAYER_mode(nPlayMode)
```
Description:
    Set the player playlist sequence mode
Arguments:
    *nPlayMode – integer* 0-SEQUENTIAL, 1-RANDOM

Function:
```
PLAYER_repeat(nRepeat)
```
Description:
    Set the player repeat mode
Arguments:
    *nRepeat – integer* 0-PLAY ALL, 1-PLAY ONE, 2-REPEAT ALL, 3-REPEAT ONE

Function:
```
PLAYER_getStats()
```
Description:
    Get the player statistics and status
Return:
    *String –* xml string containing all the player status

In the next example you could see how to obtain the player stats and how to parse it using cjson library.

```
require "PLAYER"
```

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```
ep=PLAYER.new()
json_text=ep.PLAYER_getStats()
print(json_text)


cjson=require "cjson"
value=cjson.decode(json_text)
print("SourceList[3]=" ..
```

output

{"title":"The White Stripes - Seven Nation Army","counter":"52:52","txtSource":"NET","status":1,"SourceList": ["","MMC","USB","DLNA","AIRPLAY","rock alternativo"],"source":5,"preset":1,"volume":100,"txtVolume":"0dB","stereo":1,"repeat":2,"playmode":0,"fade":1,"bootpreset1":0,"sp":1,"bitrate":"192","duration":"--:--","freq":"44.1","playlist_index":" 0001 / 0001","playlist_url":"mmc://radiobob-alternativerock-mp3-hq?sABC=5n6s2sr8%230%23no8617362n29q2o435p17n54928n16s5%23gharva&amsparams=playerid:tunein;skey:15 17236200","priority":""}
SourceList[3]=USB

Function:
PLAYER_queue(urlNextElem)

Description:
> Add next playlist item. Using this function you can compose your own playlist. In order to do a continous play it is necessary to queue next item prior to the end of the current one.

Arguments:
> *urlNextElem* – url of the item to add

Function:
PLAYER_priority(urlElemePriority)

Description:
> Use this function to play priority sounds over the normal playlist. It apply

Return:
> *String* – url of the priority element

Function:
PLAYER_play()

Description:
> If the player is paused or stopped use this function to start current loaded item reproduction, otherwise the player is paused.

Function:
PLAYER_stop()

Description:
> Use this function to stop the current player reproduction.

Function:
PLAYER_next()

Description:
> Use this function to advance to the next item. It retains the play state after advance is done.

Function:
PLAYER_previous()

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Description:

  Use this function to move back to the previous item. It retains the play state.

Function:
```
PLAYER_incvol = function()
```
Description:

  Use this function to increase the player volume

3dB. Function:
```
PLAYER_decvol = function()
```
Description:

  Use this function to decrease the player volume 3dB.

Function:
```
PLAYER_setvol = function(perc)
```
Description:

 Use this function to set the current player volume

Arguments:

 nVolume – *integer* 0 to 100

Function:
```
PLAYER_setvol = function(perc)
```
Description:

 Call this function to set the mute player parameter.

Arguments:

 bMute – *boolean* set to true to mute the player, otherwise unmute the player.

Function:
```
PLAYER_open = function( options )
```
Description:

 Call this function to open/load a preset or source or url

Arguments:

 url (optional) –- String of the url you want to open e.g. mmc://my-music/ http:://my.server/music-mp3 preset (optional) – integer from 1 to 20. Indicates the preset you want to open

 source (optional) – integer from 1 to 24 representing MMC, USB, DLNA, AIRPLAY and presets from PRESET1 to PRESET 20 (preset must be configured properly)

How to load "PRESET 12"?
```
require "PLAYER"

ep = PLAYER.new()

ep.PLAYER_open({preset=12})
```
How to load url "http:://my.server/music-mp3"?
```
require "PLAYER"

ep = PLAYER.new()

ep.PLAYER_open({url="http://my.server/music-mp3"})
```
How to load source "AIRPLAY"?
```
require "PLAYER"

ep = PLAYER.new()

ep.PLAYER_open({source=4})
```
*note the { } around the parameter which indicates optional arguments

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## 9.2.3    CONFIG. (CFG) FUNCTIONS

Set and get PLAYER parameters: PRESET, SAF, CAL, EVENT, SCRIPT and LOG. Please refer to the corresponding section to check how to set/get each parameter.

**Functions**

Function:
CFG  reset()
Description:
Restore PLAYER conFiguretion to its initial state (factory defaults). Please note that using this function you will lost all your changes.

Function:
CFG_restore(urlRestore)
Description:
Restore    PLAYER    settings    from    the    urlRestore    file    e.g. mmc://good-settings.config http:://my.server/PLAYER/mycompany.settings
Arguments:
urlRestore – String indicating the url where settings you want to restore
Note:
If you wan to apply all settings you must call DEV_reboot or call every XXX_reload function to apply changes one per one.

Function:
CFG_backup(urlBackup, bUser)
Description:
Backups PLAYER settings to urlBackup.
Arguments:
urlBackup – String indicating the url where settings are stored e.g. mmc://good-settings.config http://my.server/PLAYER/mycompany.settings
bUser – Boolean set to true for user settings only, otherwise all the settings are backuped to the target destination

Function:
CFG_backup2(urlBackup, type)
Description:
Backups PLAYER settings to urlBackup.
Arguments:
urlBackup – String indicating the url where settings are stored e.g. mmc://good-settings.config http://my.server/PLAYER/mycompany.settings
type – String available possibilities are: user, admin and gallery. Select gallery for Player, Events, , Scripts, Player Profile and Network settings. Select user for Player, Presets, Events, Calendar, Cloud Disk, and Scripts. Select Admin for all the available settings.

Function:
CFG_get = function(interface, section, variable)
Description:
Return the value of the selected variable "interface.section.variable"
Arguments:
interface – must be a valid interface: preset, saf, calendar(01..24), event (gpi1,gpi2, silence),
, script and log.
section – variable's section. Most of the cases is "settings"
variable – variable's name.

Return:
String with the variable value.

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Function:

CFG_set = function(interface, section, variable, value)

Description:
Set the value of the selected variable "interface.section.variable" to "value"

Arguments:
interface – must be a valid interface: preset, saf, calendar(01..24), event (gpi1, gpi2, silence),
gdrive, script and log.
section – variable's section. Most of the cases is "settings"
variable – variable's name.
value – variable's value.

Function:

CFG_commit = function(interface)

Description:
Commit interface changes. After changes all variables in one interface it's necessary to dump changes to PLAYER internal memory. Do it one time for each modified interface.

Arguments:
interface – must be a valid interface: network, wireless, preset, saf, calendar(01..24), event (gpi1, gpi2, silence), gdrive, script and log.

## 9.2.4    PRESET FUNCTIONS

Set and get PLAYER PRESET parameters. There are 20 presets available. Each preset can configure: name, events enabled, playlist, media alias, play status, volume, mute, play mode, repeat mode, fade mode, stereo/mono.

**Functions**

Function:
PRESET_reload(index)

Description:
Reload preset conFiguretion. Call it after modify the preset conFiguretion using CFG_set and CFG_commit

Arguments:
index – number indicating the preset number (from 1 to 20)

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### 9.2.4.1 PRESET VARIABLES

| | |
|---|---|
| presetNN.settings.bname | Preset name |
| presetNN.settings.eventList | List of enabled events separated by % (GPI1%GPI2%SILENCE) |
| presetNN.settings.bPlaylist | 1 to overwrite playlist |
| presetNN.settings.loadPlaylist | url of the playlist. Must be enabled using presetNN.settings.bPlaylist |
| presetNN.settings.mediaAlias | Alias of the enabled playlist. It appears as source |
| presetNN.settings.bStatus | 1 to overwrite status |
| presetNN.settings.status | Preset status must be PLAY or STOP |
| presetNN.settings.bVolume | 1 to overwrite preset volume |
| presetNN.settings.volume | Preset volume in % (from 0 to 100) |
| presetNN.settings.mute | 1 indicates mute, 0 to unmute |
| presetNN.settings.bPlayMode | 1 to overwrite play mode |
| presetNN.settings.playMode | RANDOM or SEQUENTIAL |
| presetNN.settings.bRepeatMode | 1 to overwrite repeat mode |
| presetNN.settings.repeatMode | PLAY ALL, PLAY ONE, REPEAT ALL or REPEAT ONE |
| presetNN.settings.bFadeMode | 1 to overwrite fade mode |
| presetNN.settings.fadeMode | OFF, XFADE or FADE |
| presetNN.settings.bStereo | 1 to overwrite stero/mono mode |
| presetNN.settings.stereo | MONO or STEREO |

> 💡 • All variables are optional.
>
> • NN indicates a number 01 to 20

```
require "PLAYER"

ep = PLAYER.new()

ep.CFG_set("preset03",    "settings",    "bname",    "My    first    preset")
ep.CFG_set("preset03", "settings", "bPlaylist", 1)

ep.CFG_set("preset03", "settings", "mediaAlias", "Alias of my first preset")
ep.CFG_set("preset03", "settings", "bVolume", 1)

ep.CFG_set("preset03",        "settings",        "volume",        100)
ep.CFG_set("preset03",    "settings",    "loadPlaylist",    "mmc://")
ep.CFG_set("preset03",  "settings",  "eventList",  "GPI1%SILENCE")
ep.CFG_commit("preset03")

ep.PRESET_reload(3)
```

### 9.2.4.2 PRESET EXAMPLES

At this moment you can load the configured preset with this instruction:

```
ep.PLAYER_open({preset=3})
```

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## 9.2.5    EVENT FUNCTIONS

Event functions lets PLAYER execute automated functions. There are 3 possibilities GPI1, GPI2 and SILENCE settings.

**Functions**

Function:
EVENT_reload(txtEvent)

Description:
    Reload event conFiguretion. Call it after modify the preset conFiguretion using CFG_set and CFG_commit

Arguments:
    txtEvent – String indicating the event to reload (GPI1, GPI2 or SILENCE)

## 9.2.6    EVENT VARIABLES

When programmaing GPI1 or GPI2 these variables are available

| | |
|---|---|
| gpiN.settings.source_polarity | Event polarity DIRECT or REVERSE |
| gpiN.settings.target_type | INTERNAL, PRESET RECALL, TRANSPORT CONTROL, LOAD & PLAY SOURCE or PRIORITY SOURCE |
| gpiN.settings.target_preset | If target_type=PRESET RECALL put here the preset number 1 to 20 |
| gpiN.settings.target_transport | If target_type=TRANSPORT CONTROL enter here one of this options: STOP, PLAY, PREV/RW, NEXT/FW |
| gpiN.settings.target_loadsource | if target_type=LOAD & PLAY SOURCE or target=PRIORITY SOURCE put here the url you want to load and play |
| gpiN.settings.target_priomode | If target_type=PRIORITY SOURCE enter here the priority mode. Choose between HOLD or PULSE |
| gpiN.settings.target_prio_retrigger | If target_priomode=PULSE set to 1 to active retrigger option. 0 to disable it |
| gpiN.settings.target_prio_pulse_time | If target_prio_retrigger=1 put here the playback duration |

> 💡   N should be 1 or 2 (for GPI1 or GPI2)

While programming SILENCE these variables are available

| | |
|---|---|
| silence.settings.source_detecttime | Put here the detection time in seconds |
| silence.settings.target_type | INTERNAL, PRESET RECALL, LOAD & PLAY SOURCE |
| silence.settings.target_preset | If target_type=PRESET RECALL put here the preset number 1 to 20 |
| silence.settings.target_loadsource | if target_type=LOAD & PLAY SOURCE or target=PRIORITY SOURCE put here the url you want to load and play |

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## 9.2.7    CALENDAR (CAL) FUNCTIONS

Calendar functions lets PLAYER execute automated functions on a date/time. There are 24 different calendar events available.

**Functions**

Function:
CAL_reload(nIndex)

Description:
Reload calendar conFiguretion. Call it after modify the calendar conFiguretion using CFG_set and CFG_commit

Arguments:
nIndex – number indicating the calendar to reload (1 to 24)

### 9.2.7.1   CALENDAR VARIABLES

| | |
|---|---|
| calendarNN.settings.general_description | Calendar name or description |
| calendar01.settings.bEnabled | Set to 1 to enable this calendar |
| calendarNN.settings.source_start_date | Start date (YYYY/MM/DD). Could be blank |
| calendarNN.settings.source_start_time | Start time (HH:MM). Could be blank. |
| calendar.settings.source_end_enable | Could be FOREVER or CUSTOM END DATE |
| calendarNN.settings.source_end_date | If CUSTOM END DATE is selected put here the calendar end date (YYYY/MM/DD) |
| calendarNN.settings.source_end_time | If CUSTOM END DATE is selected put here the calendar end |
| | time (HH:MM) |
| calendarNN.settings.source_week_nonactive | Week mask where calendar **is not** active. Should be a string of days. Each day is represented by his 2 first letters (MoTuWeThFrSaSu) |
| calendarNN.settings.source_repeat_enable | 1 indicates that the calendar must repeat the selected interval time up to the number indicated in times variable. 0 no repetition |
| calendarNN.settings.source_repeat_interval | If repeat is enabled this parameter indicates the repetition time |
| calendarNN.settings.source_repeat_times | If repeat is enalbed this parameter indicates the repetition's number |
| calendarNN.settings.target_type | INTERNAL, PRESET RECALL, TRANSPORT CONTROL, LOAD & PLAY SOURCE or PRIORITY SOURCE |
| calendarNN.settings.target_preset | If target_type=PRESET RECALL put here the preset number 1 to 20 |
| calendarNN.settings.target_transport | If target_type=TRANSPORT CONTROL enter here one of this options: STOP, PLAY, PREV/RW, NEXT/FW |
| calendarNN.settings.target_loadsource | if target_type=LOAD & PLAY SOURCE or target=PRIORITY SOURCE put here the url you want to load and play |

## 9.2.8 STORE AND FORWARD (SAF) FUNCTIONS

Store and Forward module let PLAYER download remote media content from a rsync/ssh server to local storage devices (same as PRESET1), daily, and recall PRESET1 to automatically play it.

**Functions**

Function:
LOG_trace(txtLog)

SAF_reload()

Description:
Reload Store and Forward conFiguretion. Call it after modify the Store and Forward conFiguretion using CFG_set and CFG_commit

### 9.2.8.1 STORE AND FORWARD VARIABLES

| saf.settings.bEnabled | Set to 1 to enable daily Store and Forware synchronization |
|---|---|
| saf.settings.time_param | Enter here the synchronization hour (HH:MM) |
| saf.settings.host | Put here the rsync/ssh server address |
| saf.settings.port | Enter here the rync/ssh port (default 22) |
| saf.settings.source_path | Enter here the server folder where the contents are stored |
| saf.settings.source_user | SSH/rsync username parameter |
| saf.settings.source_key | Enter here your private SSH/rsync key |
| saf.settings.source_timeout | Enter here the SSH/rsync operation timeout (in seconds) |

## 9.2.9 REGISTER (LOG) FUNCTIONS

Register functions that allows the user to write to the PLAYER internal REGISTER

**Functions**

Function:
LOG_trace(txtLog)

Description:
Add to PLAYER LOG register a trace line
Arguments:
txtLog – String containing the text you want to add. The source of the register line will be equal to "ScriptNN" where NN represents the script calling LOG_trace

Function:
LOG_warning(txtLog)

Description:
Add to PLAYER LOG register a warning line
Arguments:
txtLog – String containing the text you want to add. The source of the register line will be equal to "ScriptNN" where NN represents the script calling LOG_warning

Function:
LOG_error(txtLog)

Description:
Add to PLAYER LOG register a error line
Arguments:
txtLog – String containing the text you want to add. The source of the register line will be equal to "ScriptNN" where NN represents the script calling LOG_error

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## 9.2.10 DEVICE (DEV) FUNCTIONS

Device functions allows the user to setup firmware and general PLAYER conFiguretions.

**Functions**

Function:
```
DEV_reboot()
```

Description:
Reboot the PLAYER inmediatly.

Function:
```
txtVersion = DEV_version()
```

Description:
Get the PLAYER firmware version

Return:
txtVersion – string containing PLAYER firmware version formatted

Function:
```
DEV_update(urlFirmware)
```

Description:
Installs a new PLAYER firmware version. After installation device is rebooted automatically

Arguments:
urlFirmware – Url containing the path where PLAYER firmware resides. Must be a local storage device or http/https url.

Function:
```
total, used, percent = DEV_get(devUrl)
```

Description:
Get the PLAYER firmware version

Arguments:
devUrl – url of local storage device. Must be mmc:// or usb://

Return:
total – number representing total number of bytes of external
storage device used – number of bytes representing the used size
percent – number parameter representing the used percentadge

Example:
```
require    "PLAYER"
ep=PLAYER.new()


print("usb", ep.DEV_get("usb://"))


total,user,percent=ep.DEV_get("mmc://")
print("mmc", total, user, percent)


   usb     7823420        4223365

   mmc     15629312       68912    0
```

Function:
```
DEV_boot(nBoot)
```

Description:

Set device boot mode to nBoot

Arguments:
nBoot – number indicating load PRESET1 (bBoot=2) or keep settings (nBoot=1)

Function:
```
bEncrypt = DEV_isEncrypted(devUrl)
```

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Description:
    Get local storage encrypted flag
Arguments:
    devUrl – string must be mmc:// or usb://
Return:
    bEncrypt – boolean, true, if local storage is encrypted

Function:
```
bEncrypt = DEV_isEncrypted(devUrl)
```

Description:
    Get local storage encrypted flag
Arguments:
    devUrl – string must be mmc:// or usb://
Return:
    bEncrypt – boolean, true, if local storage is encrypted
Function:
```
bEncrypt = DEV_mac()
```

Description:
    Get device MAC address
Return:
    jsonMAC – json string representing MAC address value

```
require    "PLAYER"
device=PLAYER.ne
w()
```

```
{"mac":"A8 40 41 16 47 D6"}
```
Function:
```
bEncrypt = DEV_regkey()
```

Description:
    Get device Registration Key code
Return:
    jsonMAC – json string representing Registration Key code

```
require "PLAYER" device=PLAYER.new()

print(device.DEV_regkey())
```

```
{"regkey":"A269FCEAB4F1C20B"}
```

## 9.2.11  PANEL FUNCTIONS

Panel functions allows the user to setup firmware and general PLAYER conFiguretions.

**Functions**

Function:
```
PANEL_set=function(lockMode, password)
```

Description:
    Set the panel lock mode and password
Arguments:
    lockMode – string indicating lock mode. Possible options are UNLOCK ALL, UNLOCK
    USER, LOCK ALL password – string with the LOCK/UNLOCK password. Max length is
    8. Valid characters are: 0-9  A-Z

    .
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Function:
```
lockMode, password = PANEL_get()
```

Description:
        Set the panel lock mode and password

Return:
        lockMode – string representing lock mode. Possible values are UNLOCK ALL, UNLOCK USER, LOCK ALL
        password – string with the LOCK/UNLOCK password

## 9.2.12    FINDER FUNCTIONS

Finder functions allows the user to run finder operation on PLAYER.

**Functions**

Function:
```
FINDER_set(bLigth)
```

Description:
        Start or Stop finder operation. If finder is active, PLAYER display blinks.

Arguments:
        bLigth – boolean, set to true to start finder operation (display blink). Set to 0 to stop finder operation (normal state)

## 9.2.13    LCD FUNCTIONS

LCD functions allows the user to show messages on PLAYER LCD display. The texts are limited to LCD physical dimensions: 2 lines per 16 columns.

**Functions**

Function:
```
LCD_print(txtLine1, txtLine2, center, timeout)
```

Description:
        This functions shows a message on the PLAYER LCD display

Arguments:
        txtLine1 – String corresponding to the text on the first LCD line txtLine2 – String corresponding to the text on the second LCD line center – Booelan, set to true to center the text on the LCD display timeout – Number of seconds that message is showed in PLAYER LCD display

Function:

```
LCD_print2({txtLine1, txtLine2, bCenter, nTimeout})
```

Description:
        This functions shows a message on the PLAYER LCD display. Parameters are optional.

Arguments:
        txtLine1 (optional) – String corresponding to the text on the first LCD line txtLine2 (optional)– String corresponding to the text on the second LCD line center (optional) – Booelan, set to true to center the text on the LCD display nTimeout (optional) – Number of seconds that message is showed in PLAYER LCD display

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