Qeedji

User manual 001B

DMB400

4.13.11

Legal notice

DMB400 4.13.11 (001B_en)

Rights and Responsibilities

Product information

Product design and specifications are subject to change at any time and `Qeedji` reserves the right to modify them without notice. This includes the hardware, the embedded software and this manual, which should be considered as a general guide to the product. The accessories supplied with the product may differ slightly from those described in this manual, depending on the developments of the various suppliers.

Precautions for use

Please read and heed the following warnings before turning on the power: - installation and maintenance must be carried out by professionals. - do not use the device near water. - do not place anything on top of the device, including liquids (beverages) or flammable materials (fabrics, paper). - do not expose the device to direct sunlight, near a heat source, or in a place susceptible to dust, vibration or shock.

Warranty clauses

The `Qeedji` device is guaranteed against material and manufacturing defects for a certain duration. Check the device warranty duration value at the end of the document. These warranty conditions do not apply if the failure is the result of improper use of the device, inappropriate maintenance, unauthorized modification, operation in an unspecified environment (see operating precautions at the beginning of the manual) or if the device has been damaged by shock or fall, incorrect operation, improper connection, lightning, insufficient protection against heat, humidity or frost.

WEEE Directive

This symbol means that your appliance at the end of its service life must not be disposed of with household waste, but must be taken to a collection point for waste electrical and electronic equipment or returned to your dealer. Your action will protect the environment. In this context, a collection and recycling system has been set up by the European Union

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1 - Description and installation

2 - Configuration

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1.1 Introduction

This manual explains how to install and configure your device DMB400.

Recommendations and warnings

This device is designed to be used indoor.

This device is intended to work with the power supply unit. This power supply unit must be connected to a mains socket conforming to standard NF C 15-100. If the AC power cable is damaged, it must be replaced. It is possible to order a power supply unit replacement by sending a request to the email address sales@qeedji.tech.

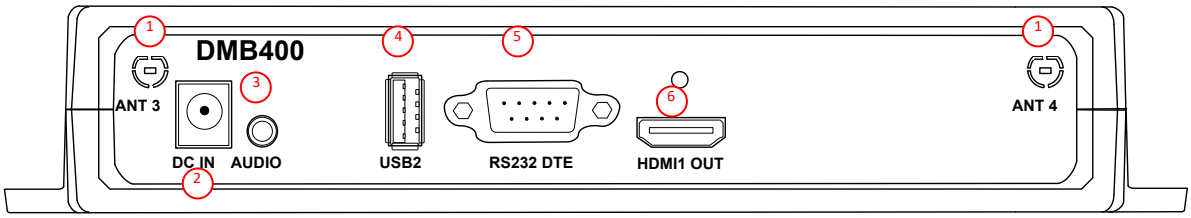
This device is a Class A device. In a residential environment, this device may cause radio interference. In this case, the user is asked to take appropriate measures.

Content of the package

Items	Description
Device	DMB400 with Gekkota embedded.
One power supply unit	12V power supply unit with cable of 1.2m.
Labels	One on the cardboard packaging and one at the back of the product. Additional label can be present in case build-in options.
Two WLAN antennas	To be screwed on the dedicated WLAN locations (provided with the device when it is supporting the `WLAN` option).

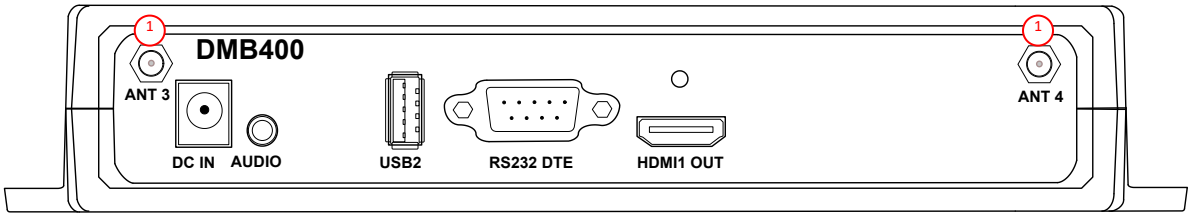
1.2 Getting started

Device front face



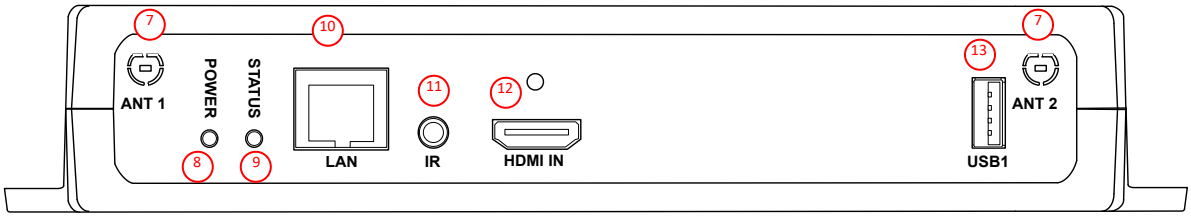
- (1) Antennas locations,
- (2) Power supply connector,
- (3) Audio connector,
- (4) USB2 3.0 connector,
- (5) RS232 DTE connector,
- (6) HDMI output connector.

Device front face with the WLAN option



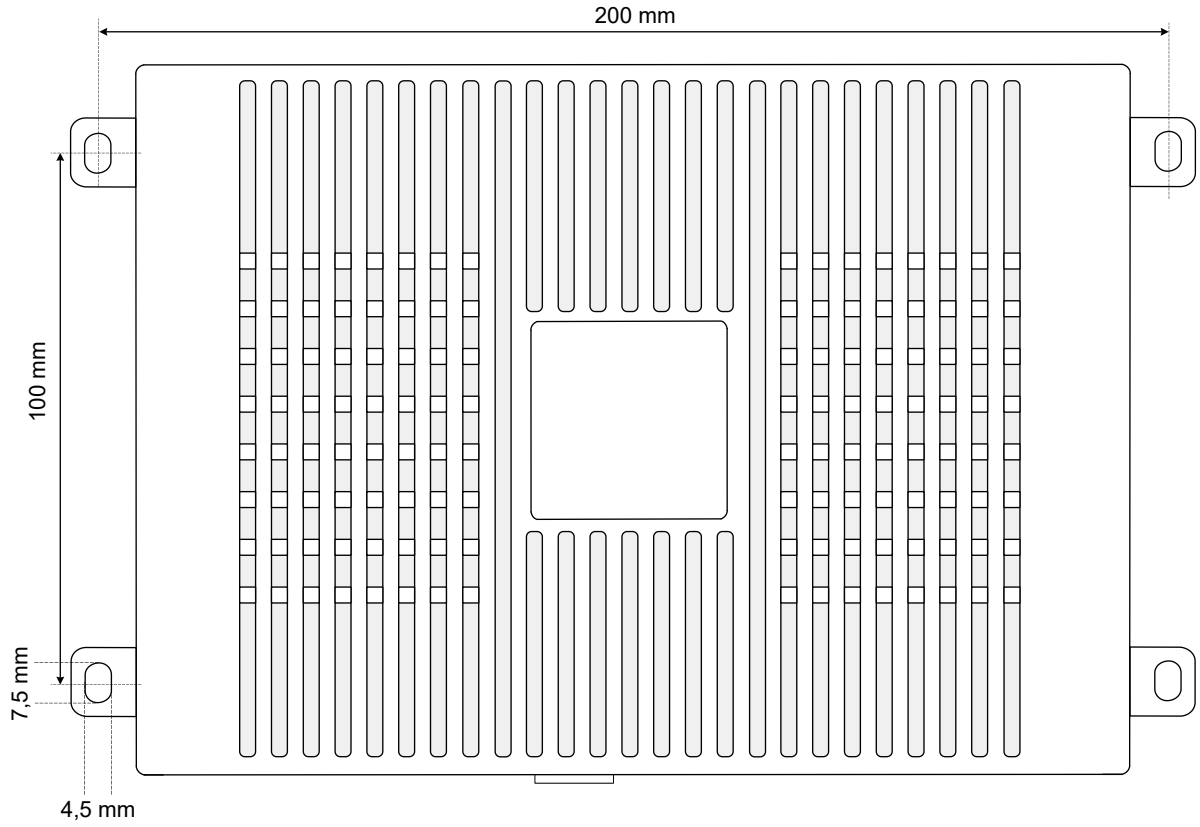
- (1) Location of the 2 WLAN antennas to screw.

Device rear face

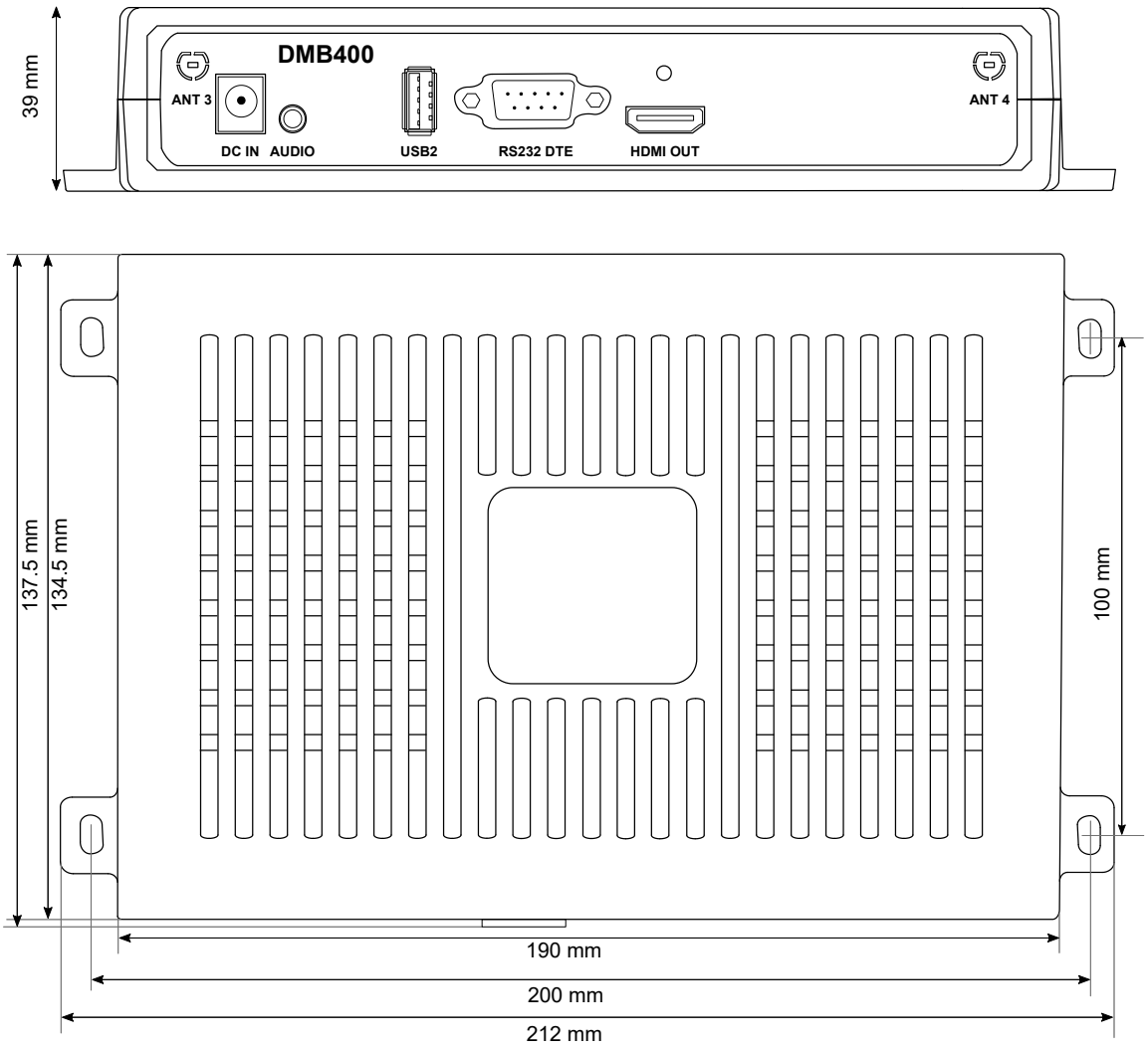


- (7) Antenna location,
- (8) Power supply red LED,
- (9) Status green LED,
- (10) LAN RJ45 connector,
- (11) GPIO/Infrared connector,
- (12) HDMI input connector,
- (13) USB1 2.0 connector.

1.2.1 Device fixture



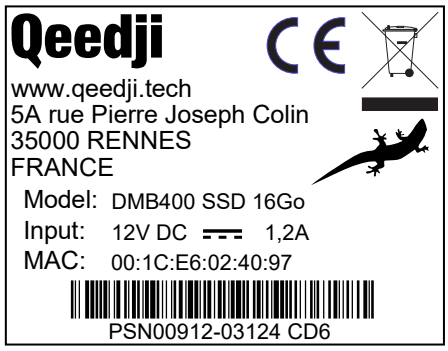
1.2.2 Device dimensions



1.2.3 Labelling

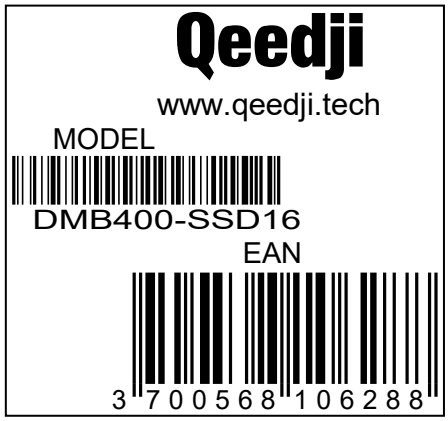
☛ The serial number of the device can be requested in case of technical support.

The model of the device, the power supply characteristics, the serial number (PSN) and the MAC address are written on labels which are stuck on the case.



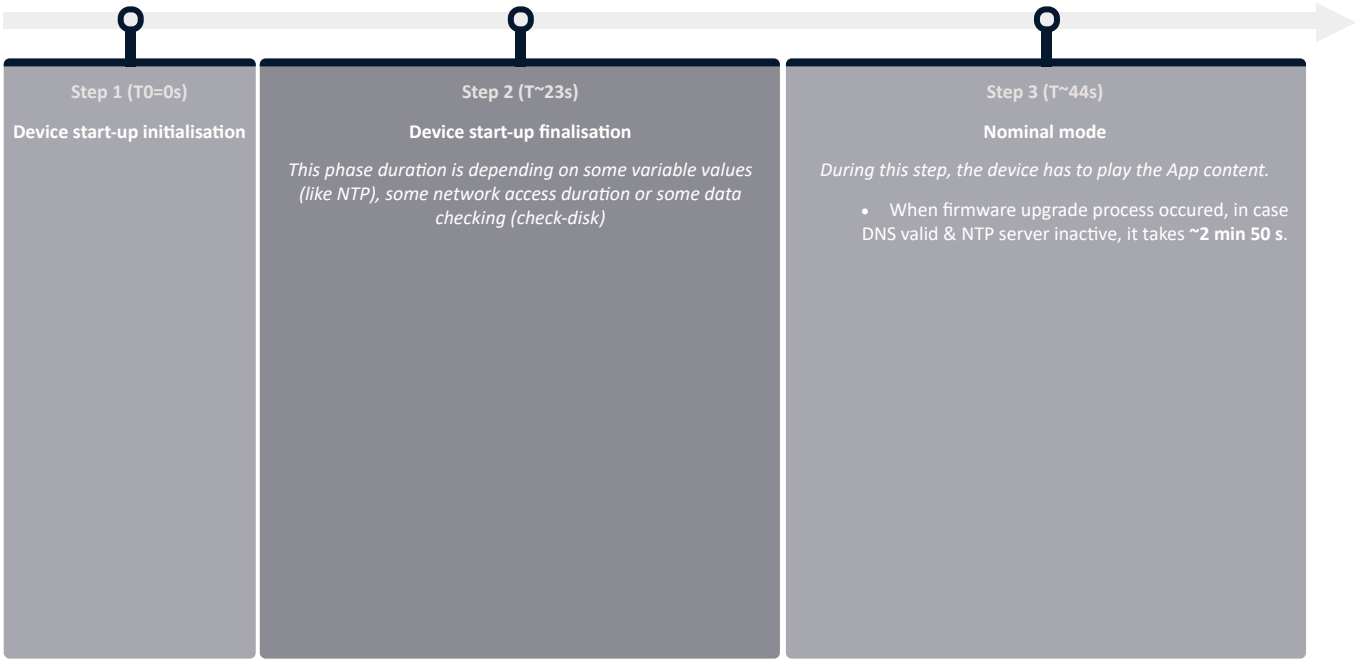
This is the label stuck also on the cardbox. They are showing information on:

- the device model,
- the serial number (PSN).



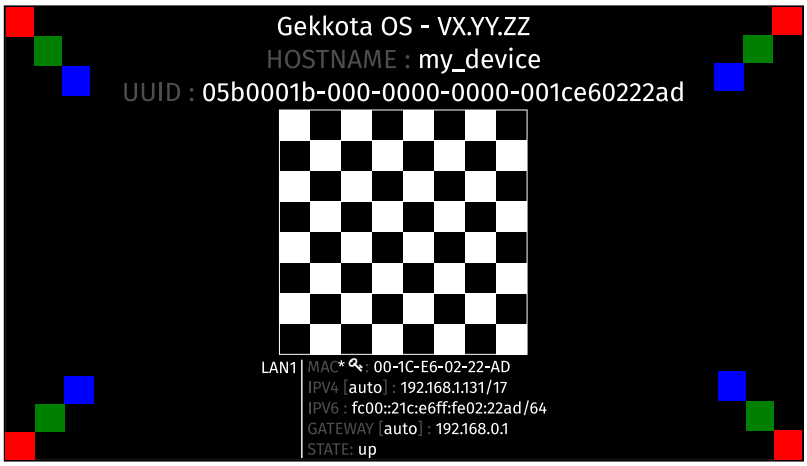
Some additional labels may be present in case of built-in options.

1.2.4 Device start-up step



1.2.5 Testcard

At the factory, the device content set by default is the `Test Card`. The chart displays important information to assist in the device configuration:



Disable the `Test Card` by using the WebUI.

If your monitor does support the CEC with its pass-through feature, the test card can be activated or inactivated thanks to the monitor remote control with the key combination [left, right, left, right] pressed in less than 10 seconds.

1.3 LEDs behaviour

LED POWER behaviour (power on device)

State	Information
Red	**OK: Power supplied**
Off	**Error: Power supply issue** [1]

LED LAN behaviour (power on device)

State	Information
Off	There is no network traffic on the Ethernet connector
Blinking	The blinking frequency is indicating the data rate on Ethernet connector

LED STATUS behaviour depending on device start-up steps

- **Step 1: Device start-up initialisation**

State	Information
Green: continuous	**OK**
Always Off	**Error: Power supply issue** [1]

- **Step 2: Device start-up finalisation**

State	Information
Off	**OK**. This step duration can be from several seconds to several minutes.
Green blinking: 1 second duration flash and periodicity every 2 seconds	**Error: Boot issue** [1]

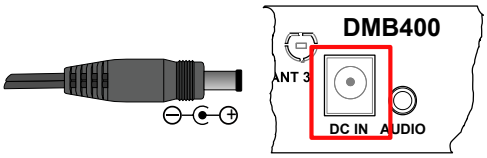
• **Step 3: Nominal mode**

State	Information
Green blinking: **1** very short flash (300 ms) spaced 4 seconds apart	**OK**
Green blinking: **2** very short and consecutive flashs (300 ms) spaced 4 seconds apart	**Warning: Fail Soft Mode Level 1** Frequent device reboot detected (for example 4 times in less than ½ hour) Message is displayed on the monitor: «Fail Soft Mode: waiting for new content ». The instability has been caused probably by a content media not supported yet by the Gekkota OS. Consequently, to prevent any further reboot, the content has been invalided. The message displayed on the monitor indicates that a new publication is needed to go ahead. [2]
Green blinking: **3** very short and consecutive flashs (300 ms) spaced 4 seconds apart	**Warning: Fail Soft Mode Level 2** Frequent device reboot detected (for example 4 times in less than ½ hour) Content is purged Message is displayed on the monitor «Fail Soft Mode: waiting for new content ». The instability has been caused probably by a content not supported yet by system or a user preference which has been modified. Consequently, to prevent any further reboot, the content has been invalidated and user preferences (saved before unexpected reboot) have been restored. The message displayed on the monitor indicates that a new publication is needed to go ahead. [2]
Green blinking: **4** very short and consecutive flashs (300 ms) spaced 4 seconds apart	**Warning: Check disk** The device has detected memory corruption on content storage. The media storage is being repaired. This repair step is called Check-Disk and its duration can be several minutes. During this step, a message “checking the file system of data partition in progress” is displayed on the monitor. [3]
Green blinking: **5** very short and consecutive flashs (300 ms) spaced 4 seconds apart	**Warning: errors on system partition** The user has to connect to device WebUI, go to *Maintenance > Tools* menu, and press button *Format* or *Repair* to solve the problem. [3]
Green blinking: **6** very short and consecutive flashs (300 ms) spaced 4 seconds apart	**Warning: a firmware upgrade is pending** During this phase, no content is played on the device, **do not switch OFF the device.**
Green blinking: **7** very short and consecutive flashs (300 ms) spaced 4 seconds apart	**Error: write problem on the storage** For an unknown reason, your storage space isn't usable any more. [3]
Off	**Error**. [1]

[1] If the problem persists in despite of an appropriate power-supply, contact support@qeedji.tech.
[2] If the problem persists, it is recommended to find out the media not supported yet by the system and remove it from content.
[3] If the problem persists after a partition repairing, contact support@qeedji.tech.

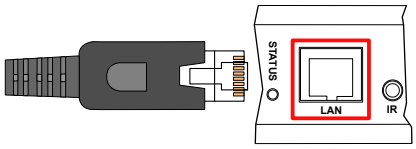
1.4 Connectors pin-out

Power supply connector (12VDC-1.2A)



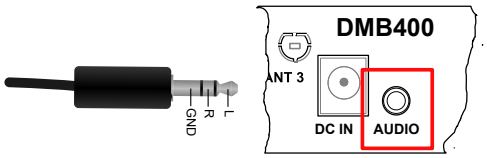
LAN connector

Ethernet RJ-45. 10/100/1000 BaseT. It is recommended to use shielded cables.



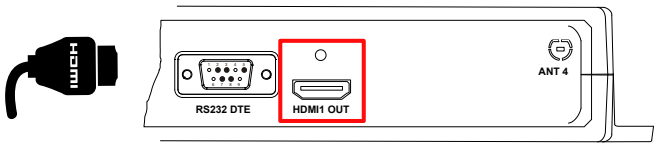
Audio Jack 3.5mm connector (stereo L+R)

It is recommended to use cables whose length is less than 3 meters.



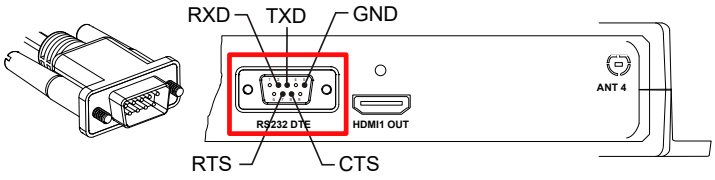
Video output connector (HDMI 2.0)

This connector is used to connect a screen or video projector.



RS232 DTE connector

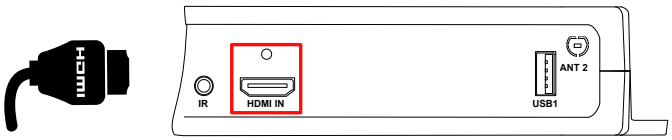
It is recommended to use cables whose length is less than 3 meters.



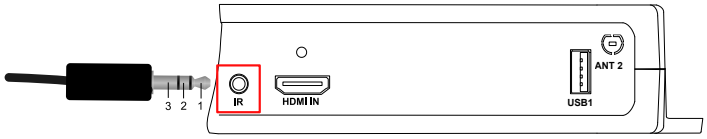
Connector pin-out

N°	Function
1	CD
2	RXD
3	TXD
4	DTR
5	GND
6	DSR
7	RTS
8	CTS
9	-

Video input connector (HDMI 1.4)



Jack 3.5mm connector (GPIO1/IR)



N°	Name	Write/Read	Control
1	Voltage reference 3.3V		
2	GPIO1	IN or OUT	CPU/GPIO1
3	Ground		

Electrical features

	Vin min	Vin max	VOH min	VOL max	VIH min	VIL max
GPIO1	-0.5V	3.6V	2.9V	0.4V	2.0V	0.8V

The 3.3V pin must not be used as power supply, but rather as a reference voltage.

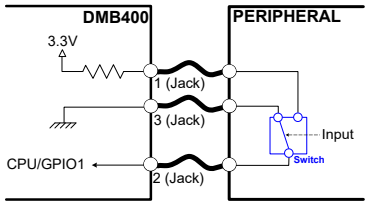
During boot, the GPIO1 is configured in input during some seconds. And then after the system startup, the GPIO1 is operational.

The GPIO has a weak pull-up.

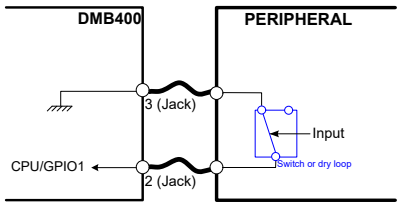
It is not recommended to hotplug/unplug the GPIO1 connector, which could damage the device.

Principle schematics for several use cases

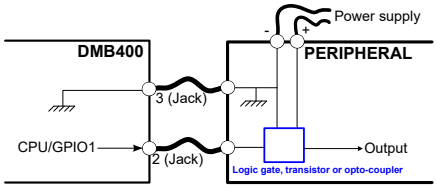
Three wires input configuration for GPIO1:



Two wires input configuration for GPIO1:



Output configuration for GPIO1:



Configuration

GPIO1 connector configuration can be done by editing the user preferences with device configuration Web interface or with a configuration script. The GPIO1 configuration part for this script is described here:

How to configure the Jack 3.5 mm connector:

```
//Set Jack 3.5 mode infrared
if (aDirection == "disable")
{
    Services.prefs.setBoolPref("system.connector.jack35_1.1.io.uart_1.enabled", true);
}
else //Set Jack 3.5 mode GPIO
{
    Services.prefs.setBoolPref("system.connector.jack35_1.1.io.uart_1.enabled", false);
}

// Set the Jack 3.5 direction: input or output
if (aDirection == "out")
{
    Services.prefs.setBoolPref("innes.app-profile.gpio-input.jack35-gpio_1.jack35_1.*.authorized", false);
    Services.prefs.setBoolPref("innes.app-profile.gpio-output.jack35-gpio_1.jack35_1.*.authorized", true);
    Services.prefs.setBoolPref("system.connector.jack35_1.1.io.jack35-gpio_1.enabled", true);
}
else if (aDirection == "in")
{
    Services.prefs.setBoolPref("innes.app-profile.gpio-input.jack35-gpio_1.jack35_1.*.authorized", true);
    Services.prefs.setBoolPref("innes.app-profile.gpio-output.jack35-gpio_1.jack35_1.*.authorized", false);
    Services.prefs.setBoolPref("system.connector.jack35_1.1.io.jack35-gpio_1.enabled", true);
}
else if (aDirection == "disable")
{
    Services.prefs.setBoolPref("innes.app-profile.gpio-input.jack35-gpio_1.jack35_1.*.authorized", false);
    Services.prefs.setBoolPref("innes.app-profile.gpio-output.jack35-gpio_1.jack35_1.*.authorized", false);
    Services.prefs.setBoolPref("system.connector.jack35_1.1.io.jack35-gpio_1.enabled", false);
}
```

2.1 Configuration Web interface

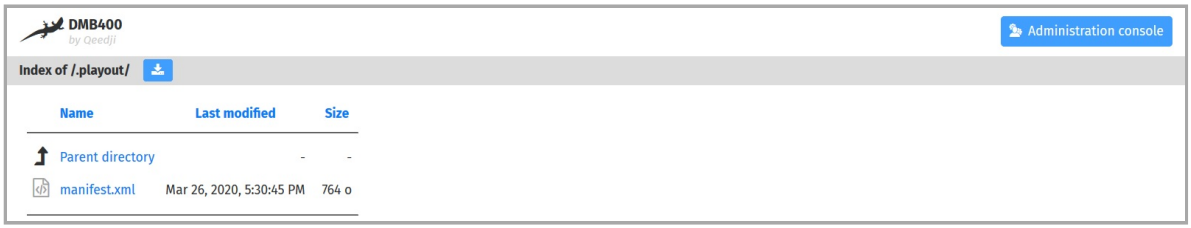
The DMB400 device has a web-based configuration interface that can be accessed with a web browser. The supported browsers are: `Google Chrome`, `Mozilla Firefox`, `MS-Edge` and `MS-Edge (Chromium)`.

It is accessible from the URL:

```
http://<device_IP_addr>/
```

By default, the login credentials for the configuration Web interface and the Web server are:

- login: `admin`,
- password: `admin`.



WebDAV directories

Clicking on the parent directory provides access to the root of the device's WebDAV server, which provides access to directories, among other things:

- `.playlog/` : location to store data for mediametry,
- `.resources/` : location to store the resources of the configuration web interface,
- `.software/` : location to store `.frm` middleware for updates,
- `.status/` : location to store the device status file `status.xml`,
- `.upnp/` : location to store `device.xml` device status for upnp detection,
- `.assets/` : location to store some of the resources of the configuration web interface,
- `.playout/` : location to store the App is hosted when deployed on the device,
- `.log/` : location to store the application logs, when they are activated.

Administration console

Click on the `Administration Console` button to access the device configuration interface.

With the button at the top right corner, choose the language in which your web interface should be displayed. The supported languages are:

- *English*,
- *Spanish*,
- *German*,
- *French*.

> ⚠ It is desirable that your device DMB400 is on time. When possible, do synchronize it with an NTP server.
>
> ⚠ After you have changed and saved all your settings in the different panes, be sure to perform a restart of the device by clicking the `Reboot the device` button so that your changes are fully reflected.

Click on the device logo at the left top corner to return to the main page.

> ⚠ If the device does not respond to its IP address, either the device power supply is unplugged, or the Ethernet cable is not connected, or the network configuration is not properly adjusted. To solve the problem, if your computer and local network supports IPV6, connect a Ethernet cable on the device and connect to the device Web interface with its IPV6 address, which can be found on the test pattern displayed on the monitor.

```
For example, for the MAC address value: ``00-1c-e6-02-1e-45`,
In a Web browser, enter the URL: http://[fc00::21c:e6ff:fe02:1e45]/.admin/
```

> To obtain the application note reminding some notions about IPV6 configuration, click on the link to the `Qeedji` site

2.1.1 Configuration > Administrator

In the `Configuration` pane, select the **Administrator** menu to change:

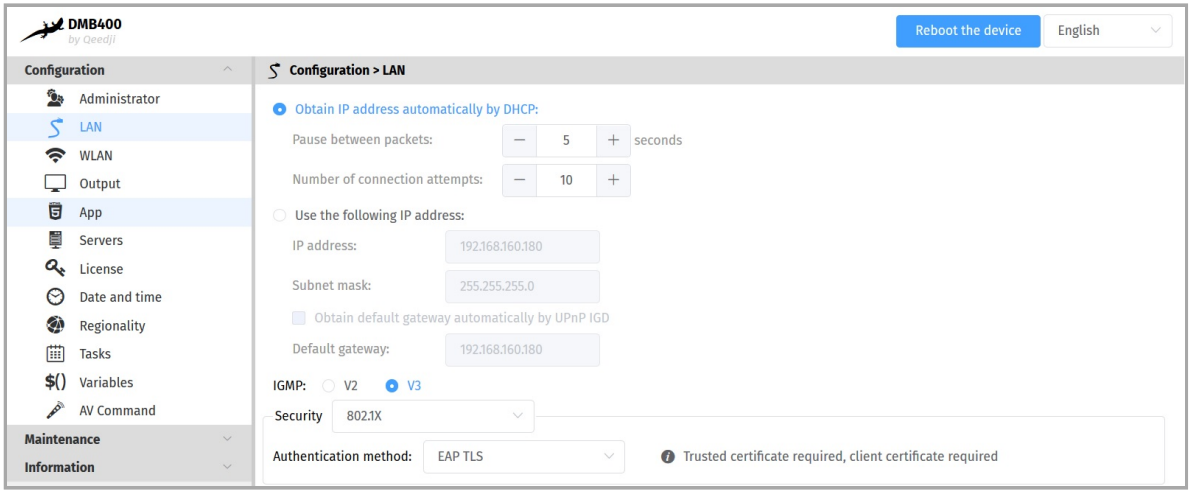
- the hostname,
- the login credentials,
- the device identification method:
  - `MAC` (default),
  - `Hostname` ,
  - `UUID` .

For security reasons, it may be useful to change the login credentials for the device's configuration Web interface. Please keep these login credentials in a safe place afterwards.

It is recommended that you enter a unique `Hostname` value for each device. In case several DMB400 devices are located in different buildings or geographical locations, we recommend that you enter hostname values with information about the building and the location (e.g. `Hall-RD-Paris-1`).

2.1.2 Configuration > LAN

In the `Configuration` pane, select the **LAN** menu to set up the network configuration of the `LAN` interface of your device:



If your device is not located in a secure network, select:

- security: *None*.

If your device is located and properly declared in a secure network, select `802.1X`, then select an `802.1X` authentication method supported by your RADIUS server:

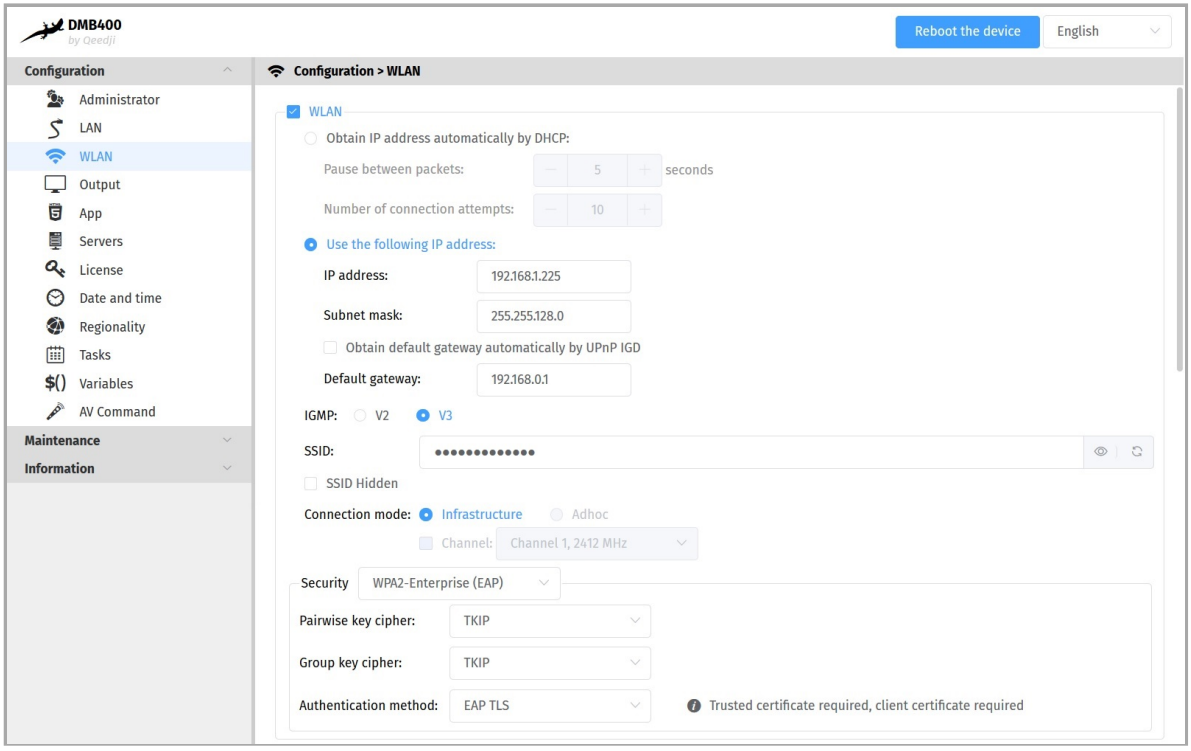
- security: *802.1x*.

> ☛ In the context of a secure network, your device must first be declared to your dedicated RADIUS server. Some identification methods require you to add a `trusted certificate` (the one used by your RADIUS server) and/or a `client certificate` (generated with the MAC address of your device and the trusted certificate of the RADIUS server); For more information, please contact your IT department.
>
> ☛ When using a 802.1X certificate with an expiration date, in case your device is not on time or when the expiration date has expired, the device is not able to access the network anymore. To work around, you have to insert a USB stick containing a specific configuration script to set either a new certificate or update the device date and time.
>
> ☛ By default, the device is configured with DHCP activated. In case the end user doesn't have a DHCP server, after the DHCP timeout, the device ends up using the static IP address whose the default value is 192.168.0.2 when never changed yet by the end user.

2.1.3 Configuration > WLAN

From the `Configuration` pane, select the **WLAN** menu to set up the network configuration of the `WLAN` interface on your device.

> ☛ The `WLAN` menu is only displayed when the `WLAN` option is supported by your device.



- `Connection mode` :
  - infrastructure: Allows you to establish a WIFI connection between your device and a WIFI router:
    - `Security` :
      - *None*,
      - *WEP*,
      - *WPA-Personal (PSK)*,
      - *WPA2-Personal (PSK)*,
      - *WPA-Enterprise (EAP)*,
      - *WPA2-Enterprise (EAP)*.
  - adhoc: Allows you to establish a direct WIFI connection between your device and e.g. your computer, without using a router.
    - `Security` :
      - *None*,
      - *WEP*.

The `SSID Hidden` option tells to the device whether or not the SSID value is broadcast over the network by your WIFI router. It also allows you to deduce the subset of `pair key encryption` and `group key encryption` modes supported.

The maximum lengths for WLAN crypto keys are:

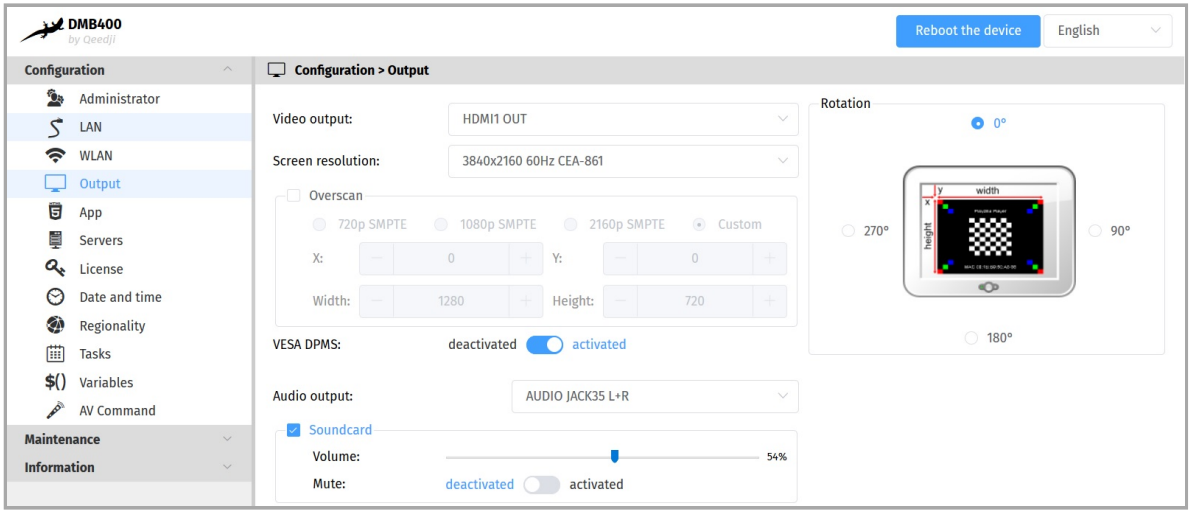
- for `WEP` key:
  - 26 hexadecimal characters max.
- for `WPA-Personal (PSK)` and `WPA2-Personal (PSK)` keys:
  - 63 ASCII characters max.

> ☛ `TKIP` pair (or group) key encryption is not supported if the router is in `IEEE 802.11n` mode.
>
> ☛ `Adhoc` connection is not supported by all computer types. For more information, contact your IT department.
>
> ☛ Selecting the *WPA-Enterprise (EAP)* or *WPA-Enterprise (EAP)* security implies that your device is located in a secure network, and therefore connects to a properly configured WIFI router with a dedicated RADIUS server. Your device must first be registered inside your dedicated RADIUS server. Some `identification methods` may require you add a `trusted certificate` (the one used by your RADIUS server) and/or a `client certificate` (generated with the MAC address of your device and the trusted certificate of the RADIUS server); For more information, please contact your IT department.

The `WLAN` interface is not checked by default.

2.1.4 Configuration > Output

From the `Configuration` pane, select the **Output** menu to configure, among other things, the unit's video and audio output.



- `Screen resolution` :
  - `Resolution` : *96x96* to *3840x2160*.
  - `Mode` : *SMPTE*, *VESA*, *CEA-861*, *SONY*, *SAMSUNG*, *CGV CPLine AV-HD*, *PC*, *DENSITRON*, *XGA*, *LESTEL*, *LINSN*, ...
  - `Frequency` : *25 Hz*, *30 Hz*, *45 Hz*, *60 Hz*, *50 Hz*.
- `Overscan` :
  - *720p SMPTE*,
  - *1080p SMPTE*,
  - *2160p SMPTE*,
  - *Personalized*:
    - `X` : horizontal origin of the viewport in pixel,
    - `Y` : vertical origin of the viewport in pixel,
    - `Width` : width of the viewport in pixels,
    - `Height` : height of the viewport in pixel.
- `Rotation` : *0°*, *90°*, *180°*, *270°*.
- `VESA DPMS` : *on* (vertical sync standby on) or *off* (vertical sync standby off) [1].
- `Audio output` : *AUDIO JACK35 L+R*.
- option `Sound card` : allows you to activate or deactivate the sound card:
  - `Volume` : *0..100%*,
  - option `Mute` : *on* (mute) or *off* (mute on).

> ☛ Rotation is not supported for resolutions higher than 1920x1080.
>
> ☛ Warning: some screens may not support certain display modes. In this case, try another mode with the same resolution.
>
> ☛ When supported by your display and device, if possible use a 60 Hz mode which is the smoothest mode for scrolling text.
>
> [1] VESA DPMS sleep and standby output is performed either by a monitor sleep task programmed into an App, or by a power management task with the `strongly optimized` mode.

> Some monitors, due to their construction, have been designed with an overscan, which means that the edges of your broadcast content on your device may not be visible on your monitor even when choosing the right optiomal resolution for your monitor. To alleviate this problem, use the overscan on your `Qeedji` device to slightly reduce the width and height of your container. While doing so, it is recommended to display the test pattern of the device.
>
> ⚠ when using the overscan, for a good configuration of your device, please make sure that your screen is not in `Wall` , `Mozaic` or `Tile` mode.

2.1.5 Configuration > App

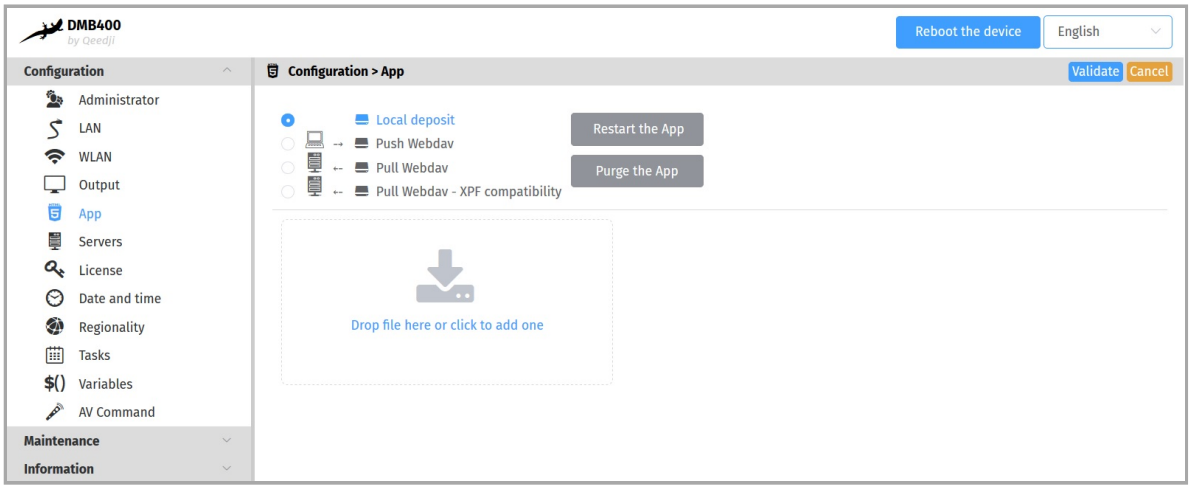
An `App` is a custom application that, once loaded on the device, allows you to play a broadcast channel or play content that a user has programmed.

From the `Configuration` pane, select the **App** menu to select how the App is loaded.

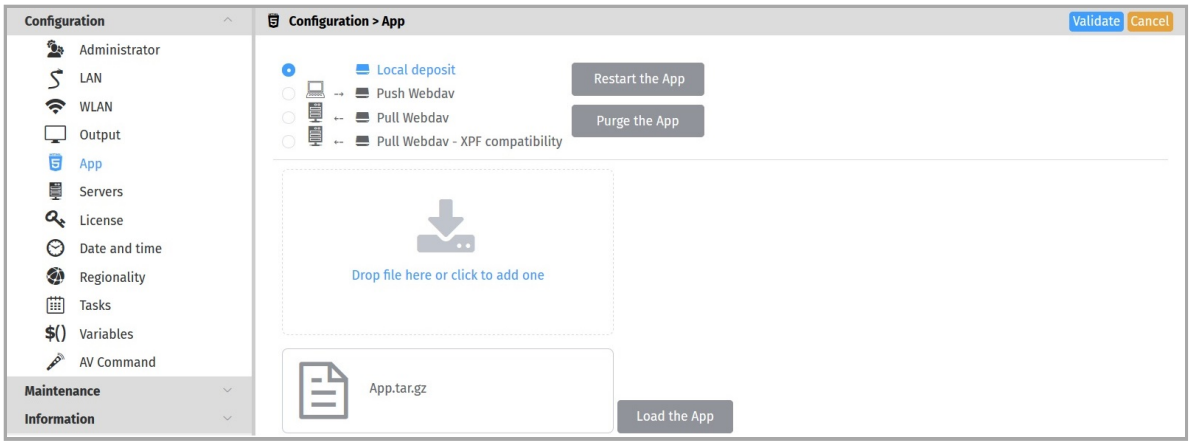
For each mode, you can use the `Purge App` or `Restart App` buttons at any time to remove the `App` from the device or restart it, respectively.

> ☛ The `Restart App` or `Purge App` cannot work when `Testcard` is activated.
>
> ☛ In order to restart an `App`, the `App` must be present on the device.

- `Local deposit` : Allows you to load an App from the device's web interface and play its contents immediately.



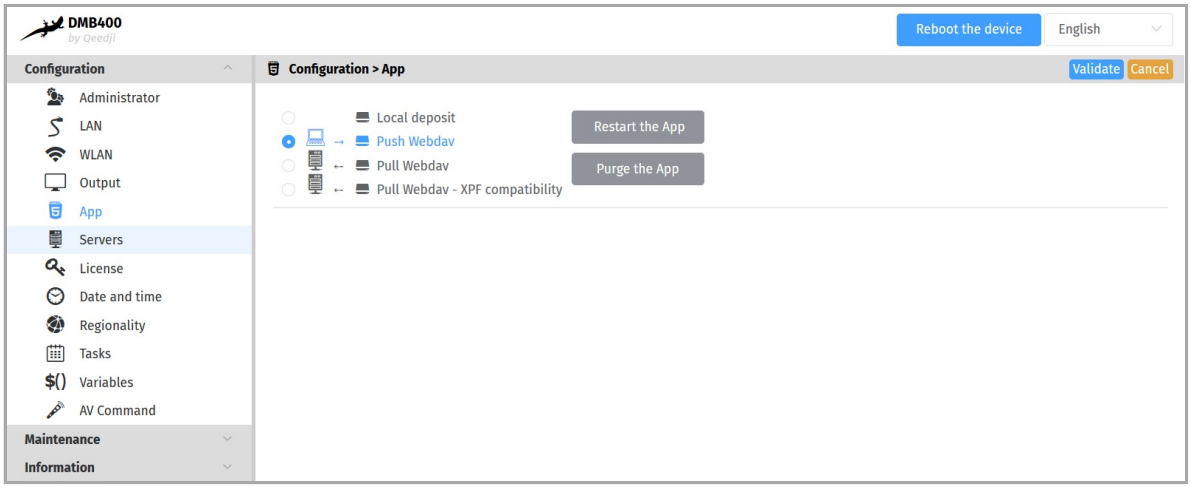
Use the `Drop file here` box or click to add one to drop your `App`.



Then click on the `Load App` button. When the file disappears from the interface, the App is loaded and launches automatically.

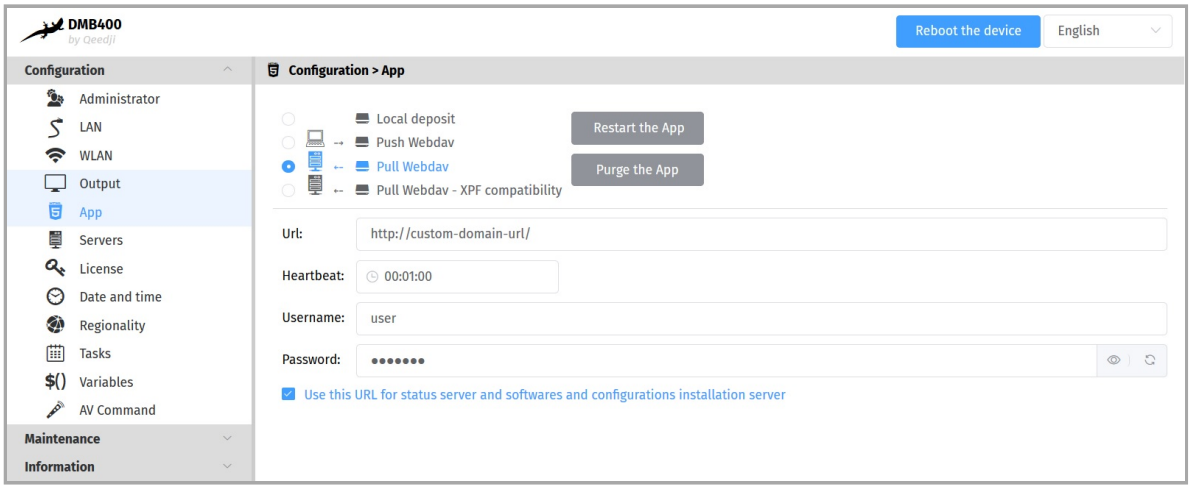
> ☛ App development is reserved for advanced users with software development skills. The content of the App must contain at least these 2 files `manifest.xml` and `player.html`. Then archive your App in one of the supported formats: `*tar.gz, *.zip, *.tar, *.tgz`. App examples are available at github SDK-G4 API (PDF example). For more information, contact support@qeedji.tech.

- `Push WebDAV` : Configure the device to receive a published App from any WebDAV client or compatible software suite. Once the App is received, its content is immediately played.



> ☛ To find out which software suites are capable of publishing an App on `Qeedji` devices, contact support@qeedji.tech.

- `Pull WebDAV` : allows you to configure the device so that it can regularly retrieve an App from a remote WebDAV server. Once the App is retrieved, its content is immediately played.

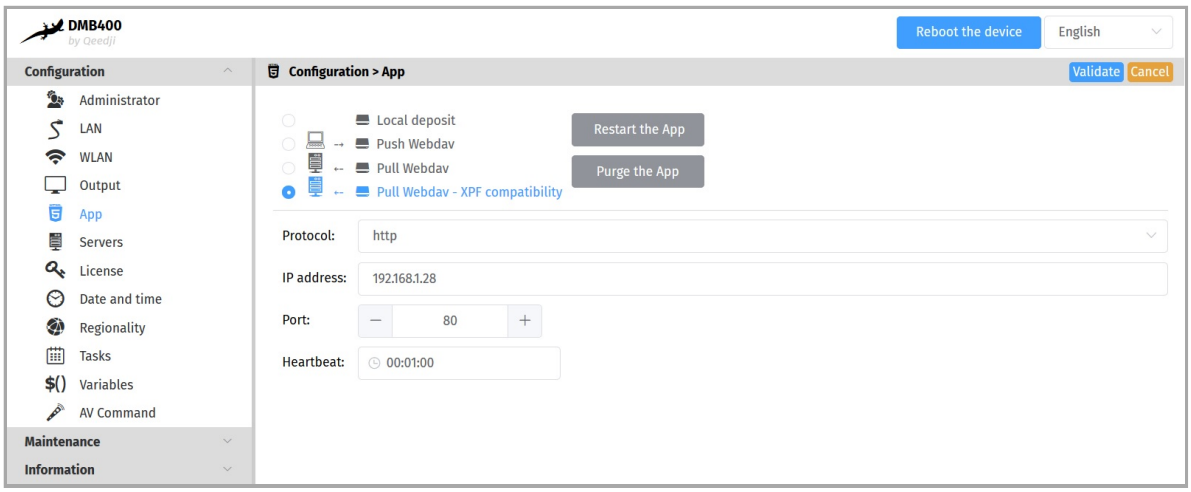


Fill in the fields below correctly:

- `URL` : URL of the remote server's WebDAV frontend. For example: `URL` : http://domain:8080/.directory/
- `ID/Password` : login and password of the remote server's WebDAV frontend.
- heartbeat: in *HH:MM:SS* format, time to connect to the remote server (default: 1 minute).
- option: `Use this URL for the status server and the software and configuration installation server` :
  - if enabled, this option allows, based on the defined URL, to automatically set the URLs of the remote servers for:
    - firmware upgrade and configuration scripts distribution:
      - `URL` + suffix `.setup/` .
    - the diffusion of the device status:
      - `URL` + suffix `.devices-status/` .
  - if disabled, this allows you to set specific remote server URLs.

> ☛ The user preference `innes.app-profile.addon-manager.*.*.*.http-downloader.validity-calendar` allows to store the contents of an ICAL file defining the validity range for triggering firmware upgrade and configuration scripts
>
> ☛ The user preference `innes.app-profile.manifest-downloader:g3.*.*.*.validity-calendar` allows to store the content of an ICAL file defining the validity range for device content updates
>
> ☛ The user preference `innes.launcher.status.validity-calendar` allows to store the content of an ICAL file defining the validity range for the diffusion of the device status (status.xml)
>
> ☛ To find out which software suites are able to publish on a remote server, an App supporting `Qeedji` devices, contact support@qeedji.tech.

- `Pull WebDAV - XPF Compatibility` : allows you to configure the device so that it can regularly retrieve XPF content from a remote WebDAV server and transform it into an App. Once the App is generated, its content is immediately played.



> ☛ The user preference `innes.app-profile.manifest-downloader:g2.*.*.*.validity-calendar` allows to store the content of an ICAL file defining the validity range for content updates of devices in `Pull WebDAV - XPF compatibility` mode.

Fill in the fields below correctly:

- `Protocol` : *http* or *https*,
- `IP address` : IP address of the remote server (XPF compatibility),
- `Port` : port used by the remote server (XPF compatible),
- `Heartbeat` : in *HH:MM:SS* format, time to connect to the remote server (default: 1 minute).

App examples

Application for programmes broadcasting (Push WebDAV and Pull WebDAV)

HTML Apps are available to broadcast a program in a media skin, according to a programming schedule. Depending on your type of media players, content transitions are supported. Complete software suites compatible with the `Push WebDAV` or `Pull WebDAV` mode are also available to help you regularly update the programming of your broadcast channel. For further information, contact support@qeedji.tech.

App for resource reservation display (Push WebDAV and Pull WebDAV)

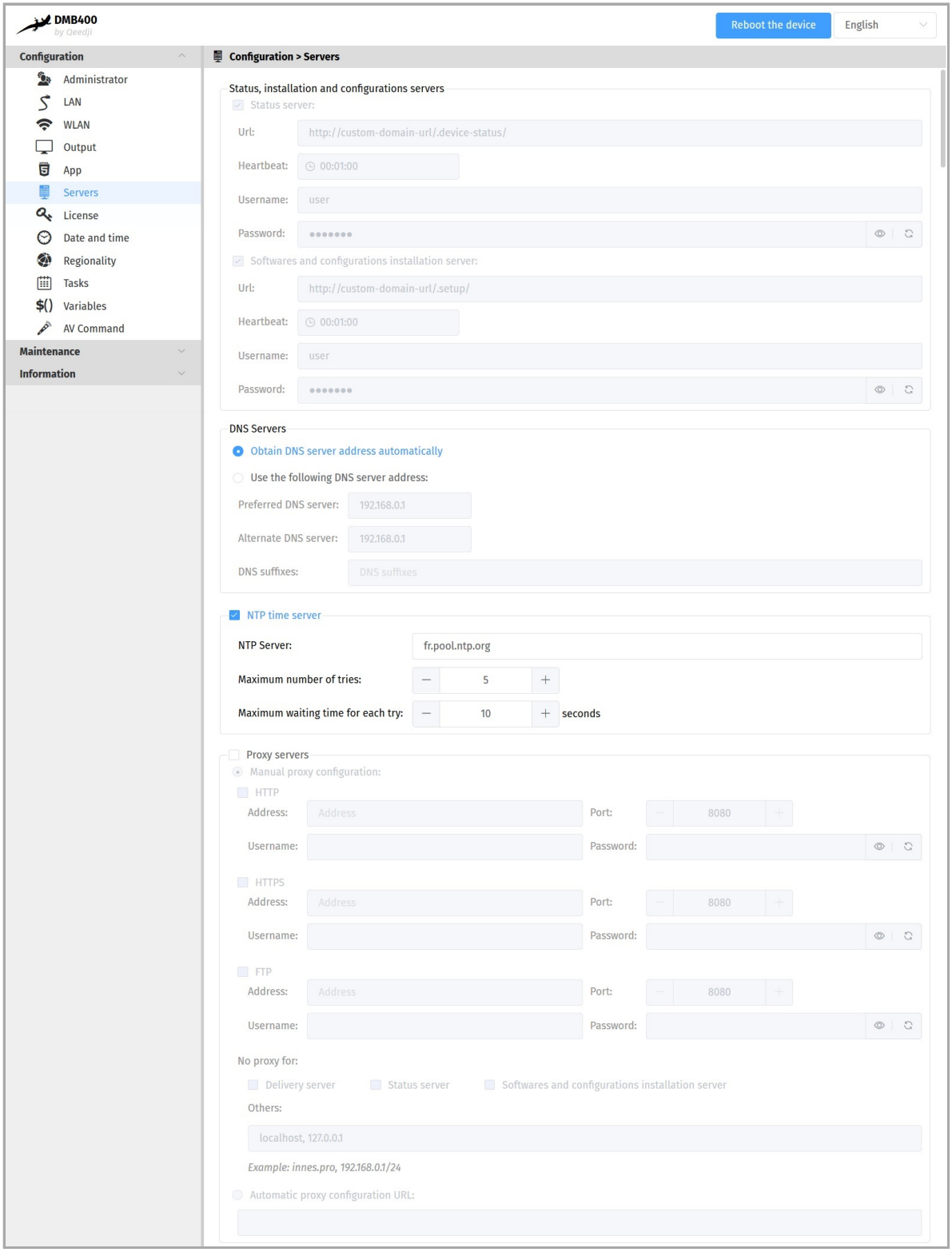
By regularly connecting to your calendar system, some avaialble HTML Apps, compatible with the media players, are able to display the ressources reservation of your company, like meetings, vehicules… For further information, contact support@qeedji.tech.

Qeedji PowerPoint publisher for media players (Push WebDAV). Once this PowerPoint Add-on is installed on your computer, it allows you to:

- easily discover the compatible media players available on your local network,
- select one or more of them,
- publish a PowerPoint of communication on each of your media players. For more information, contact support@qeedji.tech.

2.1.6 Configuration > Servers

In the `Configuration` pane, select the **Servers** menu to define the configuration of the servers peripheral to your device.

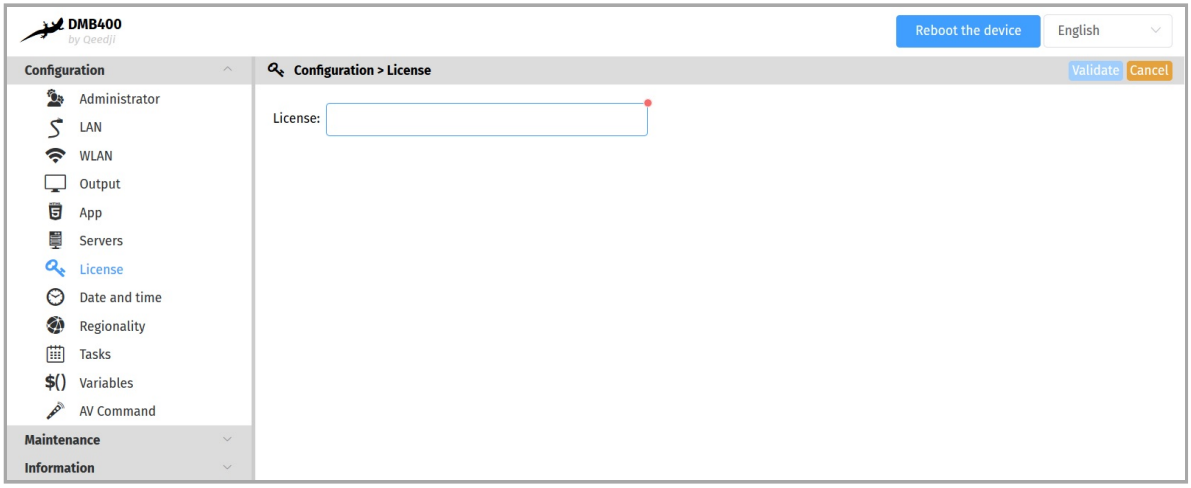


- status, software installation and configuration servers.
  - `Status server` :
    - `URL` : URL of the remote server's WebDAV frontend for the broadcast of the `.device-status/status.xml` device status file. For example: http://domain:8080/.directory/
    - `Username/password` : login and password for the remote server's WebDAV frontend connection.
    - `Heartbeat` : in *HH:MM:SS* format, period duration of the connection to the remote server (default: 1 minute).
  - `Software installation and configuration servers` :
    - `URL` : URL of the remote server's WebDAV frontend for hosting update software and configuration scripts. For example: ```http://domain:8080/.directory/````
    - `Username/password` : login and password for the remote server's WebDAV frontend.
    - `Heartbeat` : in *HH:MM:SS* format, period duration of the connection to the remote server (default: 1 minute).
- `DNS servers` ,
- `NTP Time Servers` : allows you to set a time server in order the device is always on time [1].
- `Proxy server` .

[1] If your device does not have access to the Internet, it is possible to turn an MS-Windows computer into an NTP server. For more information, contact your IT department.

2.1.7 Configuration > License

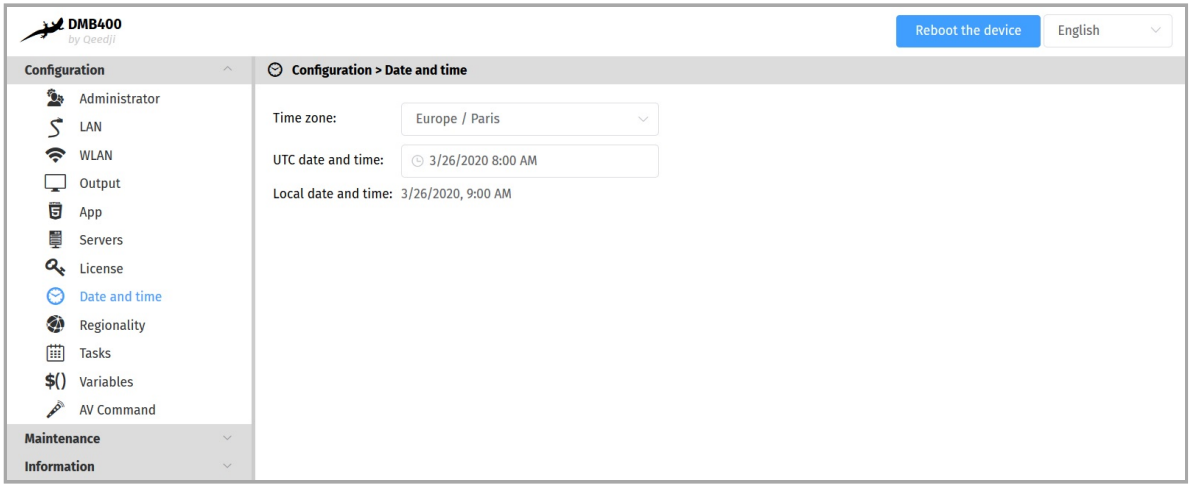
In the `Configuration` pane, select the **License** menu to view your device license number.



This license number is registered at the factory when the device is ordered. It is then sent to you by e-mail. If it has disappeared due to a handling error or after formatting your device, an error message indicating that the license is invalid will appear on your monitor. In this case, please re-enter the license for your device.

2.1.8 Configuration > Date and time

From the `Configuration` pane, select the **Date and Time** menu to check the system date and time of your device.

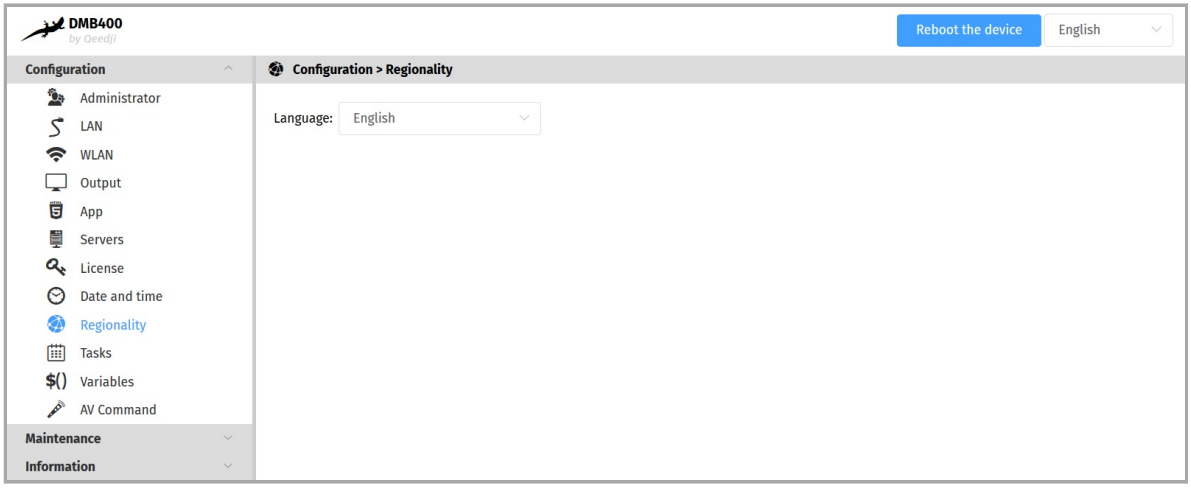


To update the date and time of your device, click on the `UTC Date and Time` value and then click the `Now` button.

> ☛ Resetting the time involves a restart of the device. If you have several configuration settings to change, it is advisable to set the last time just before restarting the device.

2.1.9 Configuration > Regionality

From the `Configuration` pane, select the **Regionality** menu to choose the language in which information or error messages from the device should be displayed.



The supported languages are:

- *English*,
- *Spanish*,
- *German*,
- *French*.

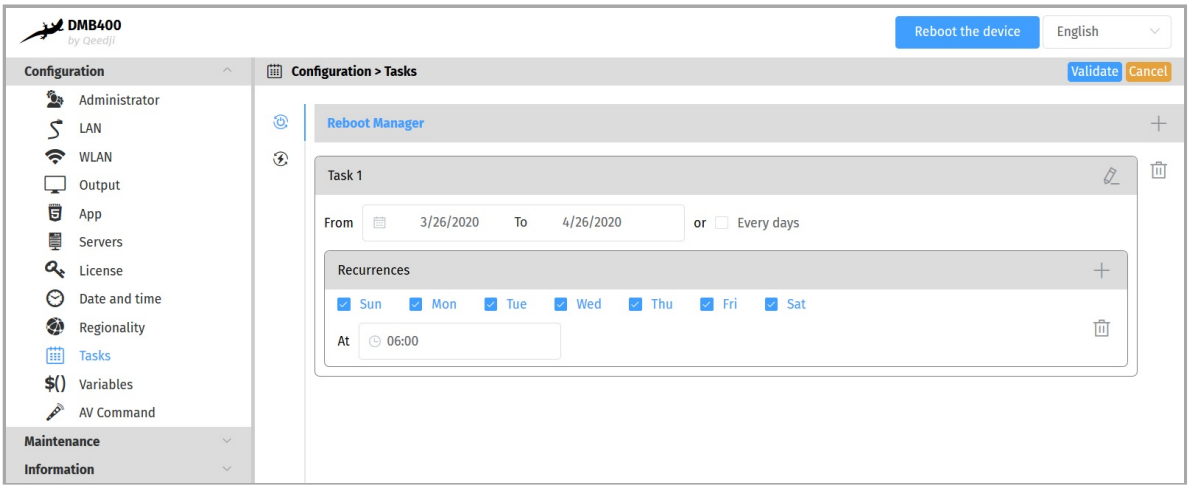
2.1.10 Configuration > Tasks

From the `Configuration` pane, select the **Tasks** menu to:

- program a device reboot task,
- program an energy management task for the appliance to reduce its energy consumption.

Device restart tasks

To create a restart task, click on the button and then the `+` button.



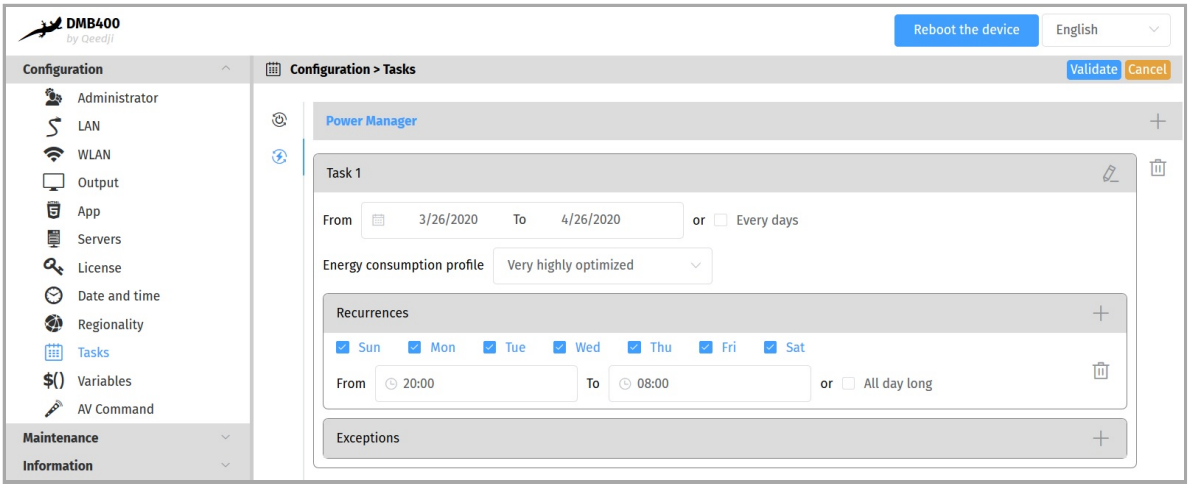
It is therefore possible to program in time several reboot occurrences whose parameters are stored in an ICAL format in the user preference `innes.reboot-manager.calendar`.

Example of value (ICAL format):

```
BEGIN:VCALENDAR
VERSION:1.0
BEGIN:VEVENT
SUMMARY: Reboot Task 1
DTSTART:20200407T091800
DTEND:20200407T091805
RRULE:FREQ=WEEKLY;BYDAY=MO,TU,WE,TH,FR,SA,SU;UNTIL=20200507T235959
END:VENT
END:VCALENDAR
```

Device power manager tasks

To create a device power manager task, click on the button and then the `+` button.



The possible values programmable in time are

- *Very highly optimized*,
- *Highly optimized*,
- *Optimized means*,
- *Nominal mode*.

It is possible to create several energy manager tasks in the same day. These settings for scheduled power level, start time, end time, occurrence, and exception are stored in ICAL format in the user preference `innes.power-manager.calendar`.

Example value (ICAL format):

```
BEGIN:VCALENDAR
VERSION:1.0
BEGIN:VEVENT
SUMMARY:Standby Task 1
X-POWER-MANAGER-LEVEL:MIN
DTSTART:20190805T090000
DTEND:20190805T120000
RRULE:FREQ=WEEKLY;BYDAY=MO,TU,WE,TH,FR,SA,SU;UNTIL=20200416T0000
END:VENT
END:VCALENDAR
```

> ☛ The Power Manager task scheduled at the web interface has no effect when another sleep task is scheduled within the App.

In this version, here is the state of the device when the power manager is in the *Very highly optimized* state:

Function	Associated User Preferences
Sound: inactivated	`innes.power-manager.level.min.<>.mute` = true
Screen: off	`innes.power-manager.level.min.<>.power-mode` = 0
Volume: 0%	`innes.power-manager.level.min.<>.volume` = 0
Opacity: 100%	`innes.power-manager.level.min.<>.opacity` = 100
Brightness: 0%	`innes.power-manager.level.min.<>.brightness` = 0
Backlight: 0%	`innes.power-manager.level.min.<>.backlight` = 0

In this version, here is the state of the device when the power manager is in the *Highly optimized* state:

Function	Associated User Preferences
Sound: activated	`innes.power-manager.level.low.<>.mute` = false
Screen: on	`innes.power-manager.level.low.<>.power-mode` = 1
Volume: 10%	`innes.power-manager.level.low.<>.volume` = 10
Opacity: 80%	`innes.power-manager.level.low.<>.opacity` = 80
Brightness: 10%	`innes.power-manager.level.low.<>.brightness` = 10
Backlight: 10%	`innes.power-manager.level.low.<>.backlight` = 10

In this version, here is the state of the device when the power manager is in the *Medium Optimized* state:

Function	Associated User Preferences
Sound: activated	`innes.power-manager.level.high.<>.mute` = false
Screen: on	`innes.power-manager.level.high.<>.power-mode` = 1
Volume: 80%	`innes.power-manager.level.high.<>.volume` = 80
Opacity: 20%	`innes.power-manager.level.high.<>.opacity` = 20
Brightness: 80%	`innes.power-manager.level.high.<>.brightness` = 80
Backlight: 80%	`innes.power-manager.level.high.<>.backlight` = 80

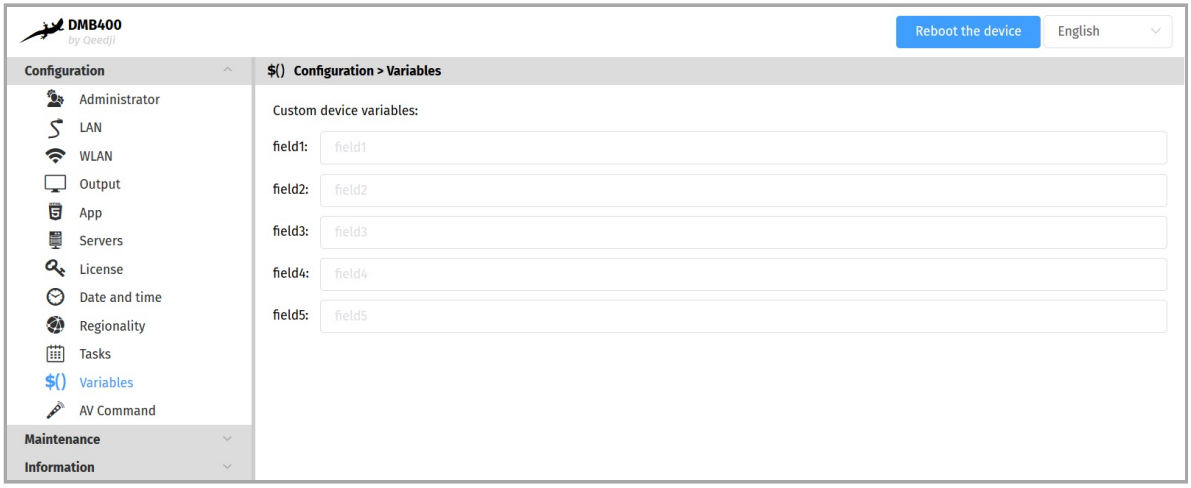
In this version, here is the status of the device when the power manager is in the *Nominal mode* state, meaning the default mode when no other power manager tasks are running.

Function	Related User Preferences
Sound: activated	`innes.power-manager.level.max.<>.mute` = false
Screen: on	`innes.power-manager.level.max.<>.power-mode` = 1
Volume: 100%	`innes.power-manager.level.max.<>.volume` = 100
Opacity: 0%	`innes.power-manager.level.max.<>.opacity` = 0
Brightness: 100%	`innes.power-manager.level.max.<>.brightness` = 100
Backlight: 100%	`innes.power-manager.level.max.<>.backlight` = 100

☛ The values of these user preferences are all modifiable.

2.1.11 Configuration > Variables

From the `Configuration` pane, select the **Variables** menu to set variable (or TAG) values for this device.



The variable names are:

```
- `field1',
- `field2`,
- `field3`,
- `field4`,
- `field5`.
```

Variable values can only contain characters from the ASCII-7bits table.

These variable values can then be used in Apps to perform specific processing for certain devices only.

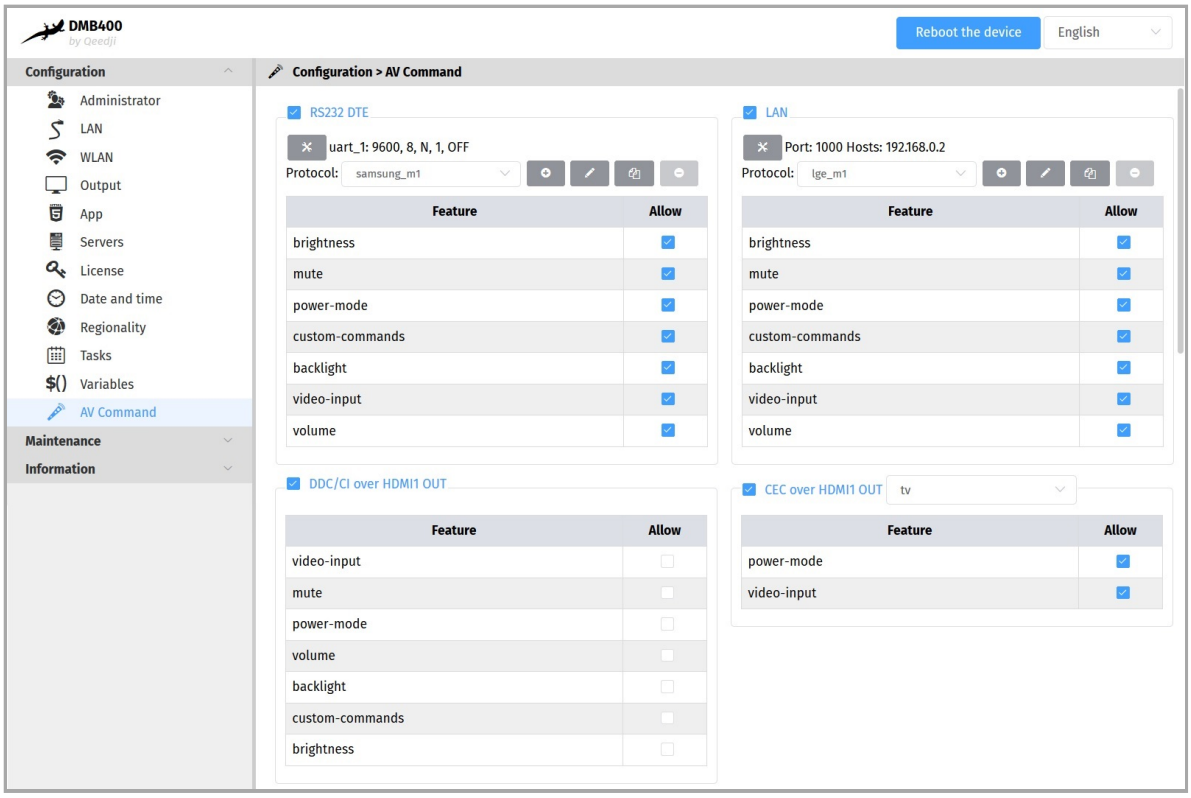
2.1.12 Configuration > AV commands

From the `Configuration` pane, select the **AV Commands** menu to enable control of peripheral displays by AV (Audio-Video) commands through the connectors:

- `RS232`,
- `ETHERNET`,
- `HDMI`.

AV Command name	Description
brighness	screen brightness control
mute	mute control
power-mode	screen saver control
back-light	screen backlight control
video-input	display audio-video source selection control
volume	display volume control
custom-commands	control of specific devices (projectors, ...) via support for user-implemented AV commands

> When the *power-mode* AV control is enabled through the specified connectors, it is automatically used when the App goes into screen saver mode or when a screen saver task is scheduled through the web-based configuration interface.



> ☛ Depending on the connectors, not all AV commands are supported.

RS232

For screen control via AV Command RS232 DTE, select the `RS232 DTE` option.

> ☛ First check in the datasheet that your monitor supports AV Command via RS232. Using the screen configuration menu, activate the support of AV Command via RS232 on your screen (example for a SAMSUNG screen: Menu `Multicontrol` then `MDC Connection` then select `RS232 MDC`)).
>
> ☛ In order for your screen to be able to receive AV commands, connect a crossover serial cable between your device and your screen.

With the ✖ button, configure the RS232 interface of your device to match the RS232 configuration of your screen.

Choose the appropriate protocol according to your monitor.

> ☛ First check in the datasheet of your monitor or audio-video device which AV Command protocol is supported.
>
> ☛ If none of the protocols are suitable, you can create your own protocol with the button ⊕ or duplicate an existing protocol with the button ⧉ and adapt it with your own AV Commands.

LAN

For screen control via AV Command LAN, select the `LAN` option.

With the ✖ button, configure the LAN interface of your device by adding:

- the IP address(es) of the screen(s) to drive,
- the port to be used (for example, port 1015) for sending AV commands.

> ☛ Check beforehand in the datasheet that your monitor supports AV Command over Ethernet. Using the screen configuration menu, activate the support of AV commands over Ethernet on your screen (for example for a SAMSUNG screen: Menu `Multicontrol` then `MDC Connection` then select `Ethernet MDC`).
>
> ☛ In order for your display to receive AV commands over Ethernet, make sure that your device and display are in the same local network.

Choose the appropriate protocol based on your monitor.

> ☛ First check in the datasheet of your monitor or audio-video device which AV Command protocol is supported.
>
> ☛ If none of the protocols are suitable, you can create your own protocol with the button ⊕ or duplicate an existing protocol with the button and adapt it with your own AV Commands.

DDC/CI on HDMI-OUT

For AV Command DDC/CI screen control through the HDMI-OUT connector, select the `DDC/CI on HDMI-OUT` option.

> ⚠ Some displays do not support AV Command DDC/CI correctly. If your screen does not exit from standby after activating AVCommand despite an App that is properly programmed, consider disabling DDC/CI AV Commands for that screen as it probably does not support standby output AV commands properly.

CEC on HDMI-OUT

For screen control by AV Command CEC through the HDMI connector, select the `CEC on HDMI-OUT` option.

> ⚠ Some screens do not correctly support AV commands by CEC. If your screen does not come out of standby after activating AVCommand despite an App that is properly programmed, consider disabling CEC AV Commands for that screen as it probably does not support standby output AV commands properly.

Next, to control your screen with the AV Controls, load and play an appropriate App. It is possible to create your own App that uses the AVCommand APIs available here: github AVCommand API.

2.1.13 Maintenance > Testcard

From the `Maintenance` pane, select the **Testcard** menu to enable or disable the test pattern. The test pattern is often enabled during:

- installing devices on the network,
- the development of the output resolution and overscan.

> ☛ When the test card is activated, the content of the App is not played.

Activation of the test pattern through your monitor supporting CEC

If your monitor supports the CEC[1][2] on HDMI, you can enable or disable the test pattern by pressing a key combination on the monitor's remote control:

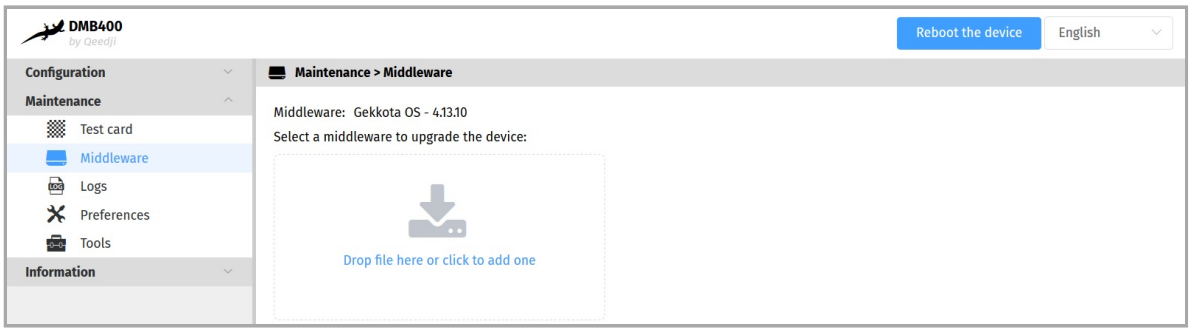
- [left Arrow, Right Arrow, Left Arrow, Right Arrow] key combination in less than 10 seconds.

> ☛ Make sure that no menus or banners are displayed on the monitor.
>
> ☛ Before applying the keystroke combination, some monitors require you to deselect and then select the HDMI source of the display to which the device is connected to force a CEC*Set*Input_Source
>
> [1] For `SAMSUNG` monitors, CEC is usually activated by activating the `Anynet` function. [2] for `LG` monitors, CEC is usually activated by using the `Simplink` key on the remote control.

Function	Linked User Preference
Support for test pattern activation by key combination	`innes.player.test pattern.key-event.*.authorized` (default= true)

2.1.14 Maintenance > Middleware

Connect to the device configuration Web interface by entering the URL in your Web browser. `http://<device-ip-addr>/` . From the `Maintenance` pane, select the **Middleware** menu to view the version of the middleware installed on your device.



> ☛ Corrective and evolutive maintenance software versions are regularly made available in the support tab of the official `Qeedji` website http://www.qeedji.tech. It is therefore advisable to regularly update your device. From this website, download the latest version available for your device model. Unzip the `.zip` archive and get the `.frm` file.

Drop your `.frm` file in the `Drop file here` box or click to add one, then click on the `Send` button to update the `Gekkota OS` version of your device. Wait a few minutes, the time to load and install the new version. Go back to the configuration web interface and check the new Gekkota OS version number of the device.

> ⚠ Do not electrically disconnect the device during the firmware upgrade. For more information, refer to the chapter § LED behaviour.

2.1.15 Maintenance > Logs

From the `Maintenance` pane, select the **Logs** menu to activate logs. The log levels are

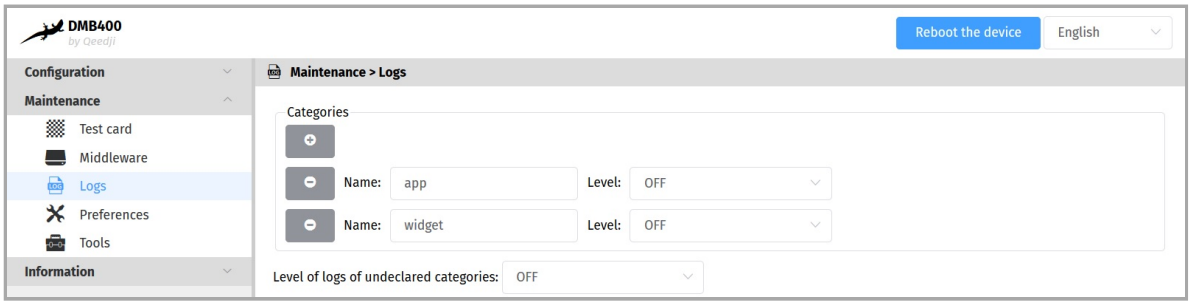
- `DEBUG` : activation of level logs: ERROR + WARN + DEBUG,
- `WARN` : activation of level logs: ERROR + WARN,
- `ERROR` : activation of level logs: ERROR,
- `OFF` : disabling logs.

Logs are compartmentalized according to software functions such as:

- `app` : App debug,
- `widget` : HTML widget debugging,
- `network` : debug of the network related layer,
- support may ask you to activate other logs in exceptional cases.

> ☛ These logs can only be interpreted by software developers who are familiar with the software bricks that have been developed.

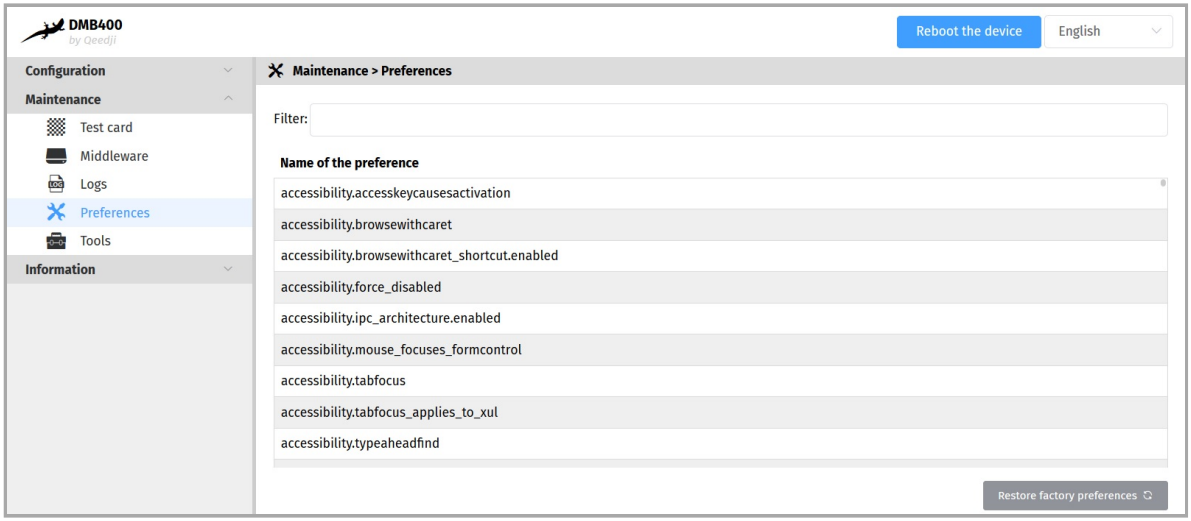
Activating the logs with a level other than `OFF` should only be done after a request from `Qeedji` support.



> ⚠ Enabling traces `All trace levels of undeclared categories` with a `DEBUG` or `WARN` level can significantly disrupt the operation of the device.
>
> ⚠ After a debug session with support, in nominal operation, all levels should be reset to `OFF` .

2.1.16 Maintenance > Preferences

In the `Maintenance` pane, select the **Preferences** menu to view all the preferences.



The filter allows you to list only those preferences whose name contains the string entered in the filter. All preferences have optimal default values.

> ⚠ Before changing any value of a preference, please consult your `Qeedji` support.

Double click on a preference to change its value.

The `Restore Factory Preferences` button resets a subset of preferences allowing the device to reprogram its factory preferences.

Here are some user preferences that may be useful.

user preference	value	description
`innes.video.renderer.default`	*overlay* (default value)	Supports 1 UHD video + 1 H265 video simultaneously. This also supports the HDMI input which is treated as an additional video decoding. This allows to process the text scrolling overlay 60Hz. Allows to support video decoding at the HDMI input. Supports the enhanced hardware deinterlacing filter as well as the display of Mpeg-TS interlaced video.
`innes.video.renderer.default`	*gpu*	Allows to support 2 simultaneous 1080p video decoding + 2 simultaneous 720p decoding or to support interlaced video in very small areas.
`innes.video.decoding-group.enabled`	true	Allows to decode multiple videos at the same time.
`media.mediasource.enable`	*false*	Disabling the DASH MSE.
`innes.hid.pointer-event.*.authorized`	*true*	Allows to support for HDMI/USB touchscreens.
`innes.video.has.max-bitrate`	*5*	(Mbps) setting the maximum bitrate of a DASH Mpeg stream.
`media.cache_size`	*16384* (default) to *65536*	(in KB) Allows to support higher bitrate DASH Mpeg streams.
`innes.webserver.providers.http.enabled`	*true*	Allows to support access to the device in http://.
`innes.webserver.providers.https.enabled`	*true*	Allows to support access to the device in https://.

2.1.17 Maintenance > Tools

In the `Maintenance` pane, select the **Tools** menu to:

- `Correct` errors detected on the SD card data partition,
- format the data partition of the SD card.

The format and correct buttons are only accessible if the Gekkota OS middleware has actually detected write or read errors on the partition.

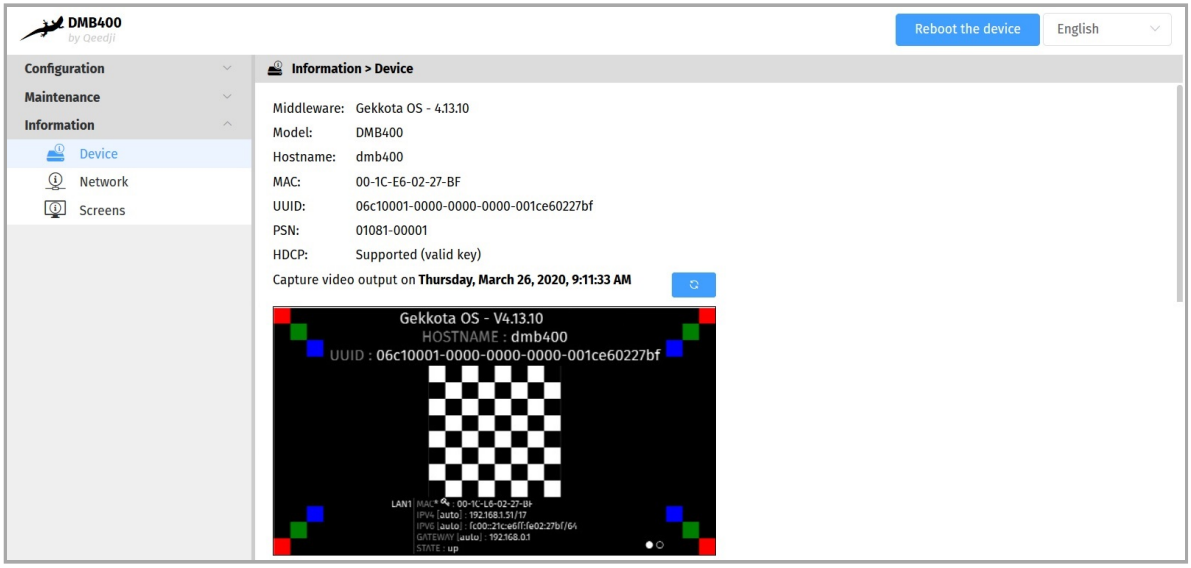
A message indicates on the monitor that an error has occurred on the partition and that a reboot is necessary.

If the `Correct` button is accessible, clicking on the `Correct` button will repair the contents without rebooting an App. If the problem persists, and the `Format` button is available, clicking the `Format` button will format the contents. It is then necessary to republish an App.

> ☛ If the problem persists after formatting the SD card, contact your `Qeedji` support.

2.1.18 Information > Device

In the `Information` pane, select the menu **Device** to view system information about the device.



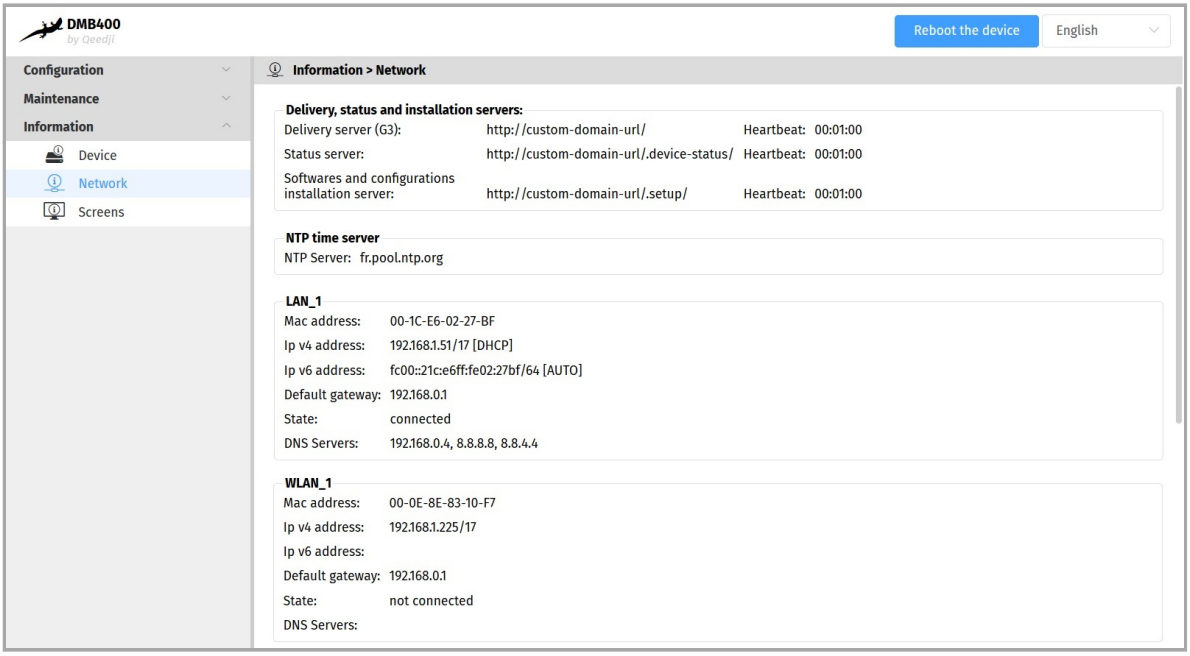
- `Middleware` : label and version of the embedded middleware,
- `Model` : model of the `Qeedji` device,
- `Hostname` : name of the device on the network,
- `MAC` : MAC address (value used in particular to generate the license key of the device),
- `UUID` : Universal Unique IDentifier,
- `PSN` : Product Serial Number.
- `HDCP` :
  - *Supported (valid key)*: Indicates that HDCP is supported by the device and that it has a valid HDCP key,
- video output capture on `<day date>` : last video output capture.

Press the button 🔄 to refresh the screenshot.

The width of the screenshot is set by the `innes.screenshot.width-max` preference (default: 960 pixel). If the width of the device's display resolution is less than this value, the width of the screenshot fits this narrower resolution width.

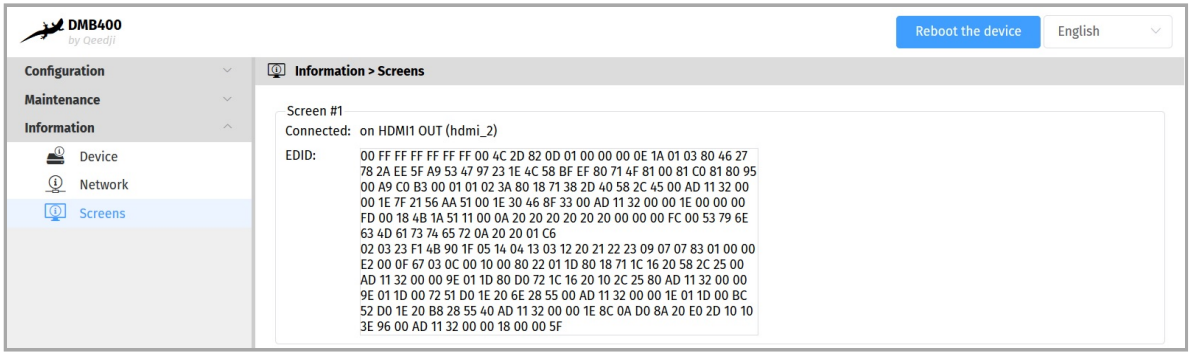
2.1.19 Information > Network

In the `Information` pane, select the **Network** menu to view a summary of the device's network configuration.



2.1.20 Information > Screens

From the `Information` pane, select the **Screens** menu to view information about the connected display in HDMI.



2.2 Configuration by script

The dmb400 can auto-configure when it can load a configuration script. The configuration-by-script can be either hosted on remote WebDAV server, or broadcasted by your DHCP server (code 66) or injected with a USB storage device. For further information, refer to the configuration-by-script application note on the http://www.qeedji.tech.

In case the script is containing an error, the error is reported in the file `http://<device-ip-addr>/.status/status.xml`

2.3 Appendix

Device status (status.xml)

The DMB400 device is updating regularly its device status stored in its `/.status` WebDAV directory:

```
http://<device-ip-addr>/.status/
```

This file can be periodically sent to a remote WebDAV server for monitoring purpose.

Status.xml example:

```
<device-status xmlns="ns.innes.device-status">
<device>
<id-type>MAC</id-type>
<mac>00-1c-e6-02-20-e2</mac>
<hostname>dmb400</hostname>
<uuid>05c00002-0000-0000-0000-001ce60220e2</uuid>
<modelName><gekkota_os-model></modelName>
<modelNumber>4.13.10</modelNumber>
<serialNumber>00920-00002</serialNumber>
<middleware>gekkota-4</middleware>
<field1/>
<field2/>
<field3/>
<field4/>
<field5/>
<ip-addresses>
<ip-address>
<if-type>LAN</if-type>
<origin>dhcp</origin>
<value>192.168.1.119/17</value>
</ip-address>
<ip-address>
<if-type>LAN</if-type>
<origin>auto</origin>
<value>fc00::21c:e6ff:fe02:20e2/64</value>
</ip-address>
</ip-addresses>
<addons/>
</device>
<status>
<date>2020-03-31T17:40:16.055055+02:00</date>
<launcher>
<power-manager level="MAX"/>
<manifest-metadata xmlns:pzpm="ns.innes.gekkota.manifest">
<pzpm:publish-size>0</pzpm:publish-size>
<pzpm:publish-generator>gekkota_ui</pzpm:publish-generator>
<pzpm:publish-date>2020-03-30T06:45:26.759Z</pzpm:publish-date>
</manifest-metadata>
<state>NO_CONTENT</state>
</launcher>
<storage>
<total unit="byte">1912532992</total>
<used unit="byte">22161408</used>
</storage>
<display-outputs/>
<setup>
<configuration>
<metadatas/>
<version>2019-06-21T13:25:25Z</version>
</configuration>
</setup>
</status>
</device-status>
```

3.1 Technical specifications

Model	Manufacturer
DMB400	Qeedji

Processors	
CPU	Quad core cortex-A9, 1.2GHz
GPU	MALI-400

Peripherals
1x USB 2.0 Host (Low/Full/High Speed)
1x USB 3.0 Host (Low/Full/High/Super Speed)
1x Jack 3.5 configurable in GPIO or Infrared
1x RS232 DTE

Storage
Internal Flash Memory for OS
SSD mSata

Middleware
Gekkota OS 4

Audio outputs
Jack 3.5 R+L stereo analog
Embedded with HDMI output

Video output
1x HDMI 2.0

Display resolutions for video output
640x480 60Hz, 800x600 60Hz VESA, 1024x768 60Hz VESA, 1024x768 60Hz XGA, 1024x576 60Hz VESA, 1024x576 50Hz VESA, 1024x600 60Hz DENSITRON 84-0188-001T, 1280x720 60Hz CEA-861, 1280x720 50Hz CEA-861, 1280x720 60Hz VESA, 1280x720 50Hz VESA, 1280x720 60Hz SMPTE (720p), 1280x720 50Hz SMPTE (720p), 1280x720 60Hz CEA, 1280x720 50Hz CEA, 1280x720 60Hz SONY, 1280x720 60Hz CGV CPLine AV-HD, 1280x720 60Hz SAMSUNG, 1280x768 60Hz VESA, 1280x768 50Hz VESA, 1280x800 60Hz VESA, 1360x768 50Hz VESA, 1360x768 60Hz VESA, 1376x768 60Hz VESA, 1376x768 50Hz VESA, 1376x768 60Hz PC, 1920x1080 60Hz CEA-861, 1920x1080 50Hz CEA-861, 1920x1080 60Hz VESA, 1920x1080 50Hz VESA, 1920x1080 60Hz SMPTE (1080p), 1920x1080 50Hz SMPTE (1080p), 1920x1080 60Hz CEA, 1920x1080 50Hz CEA, 3840x2160 59.94Hz, 3840x2160 60Hz CEA-861, 3840x2160 50Hz CEA-861, 3840x2160 50Hz VESA, 3840x2160 45Hz VESTEL, 3840x2160 30Hz CEA-861, 3840x2160 25Hz CEA-861, 2560x1440 60Hz CEA-861, 3840x600 60Hz VESA, 1920x540 60Hz VESA, 1920x300 60Hz VESA, 768x2560 60Hz LINSN, 128x96 60Hz, 112x96 60Hz, 96x96 60Hz,
Note: the rotation is not supported for the resolution upper than 1920x1080

Video input
1x HDMI 1.4b

Preferred resolutions of EDID for Video input
1920x1080p 59.94Hz, 1920x1080p 60Hz, 1920x1080p 50Hz, 1280x720p 59.94Hz, 1280x720p 60Hz, 1280x720p 50Hz, 1920x1080i 59.94Hz, 1920x1080i 60Hz, 1920x1080p 29.97Hz, 1920x1080p 30Hz

Network
1x Ethernet 10/100/1000 BaseT

Options	Information
GPRS/EDGE/HSDPA Modem	Mini-SIM card (25 mm x 15 mm)
WIFI 802.11a/b/g/n (WIFI 4)	SPARKLAN WPEA-152GN(BT) module

Power supply
12V DC (1.2A)

Operating temperature	Storage temperature
0°C to +40°C	-20°C to +60°C

Operating humidity	Storage humidity
< 80%	< 85%

Weight	Dimensions (WxHxD)
0,7 Kg	212 x 137.5 x 39 mm

Warranty
3 years

3.2 Conformities

In conformity with the following European directives:

- `LVD 2014/35/EU`,
- `EMC 2014/30/EU`.

4.1 Contacts

For further information, please do not hesitate to contact us:

- by phone at **+33 (0)2 23 20 01 62**,
- by e-mail:
  - **Technical support**: support@qeedji.tech,
  - **Sales department**: sales@qeedji.tech.

Refer to the `Qeedji` Website for FAQ, application notes, and software downloads:

http://www.qeedji.tech/

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```

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```