

# Qeedji

User manual

**SBL10e Regular**

1.10.12 002A



## Legal notice

### SBL10e Regular 1.10.12 (002A\_en)

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#### 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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# Part I | Description and installation

## 1.1 Introduction

This manual explains how to install and configure your device SBL10e.

### Recommendations and warnings

This device is designed for indoor use only.

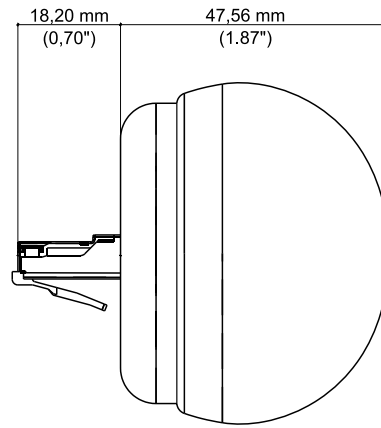
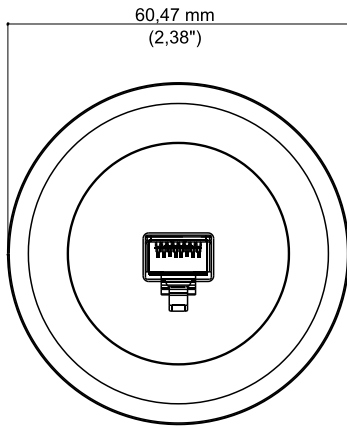
To ensure better rendering of the SBL10e, the device should not be installed under direct sunlight.

The SBL10e device is designed to be illuminated 12 hours a day, 7 days a week.

### Package Contents

Articles	Description
Device	SBL10e device with the default <code>regular</code> application embedded.

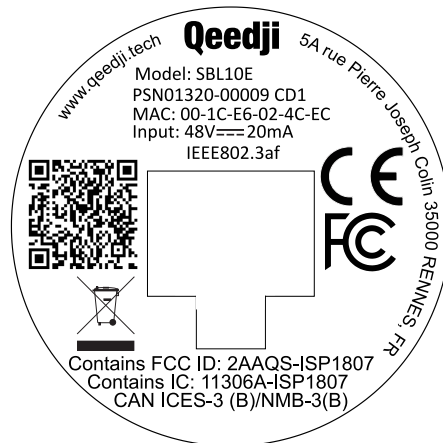
## 1.1.1 Device dimensions



## 1.1.2 Labelling

### PSN label

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



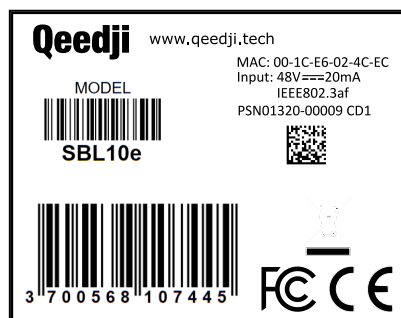
▮ The QR code on the PSN label is corresponding to the product identification URL, for example:

`i.qeedji.tech?model=SBL10e&sn=01320-00009&mac.Lan1=00-1C-E6-02-4C-EC&mac.wpan1=DF-27-83-3C-8A-90.`

### EAN label

This is the label stuck also on the cardbox. It is showing:

- the device model,
- the product serial number (PSN) (embedded also in the QR code),
- the manufacturer Web site.



▮ The QR code on the EAN label is corresponding to the product PSN, for example:

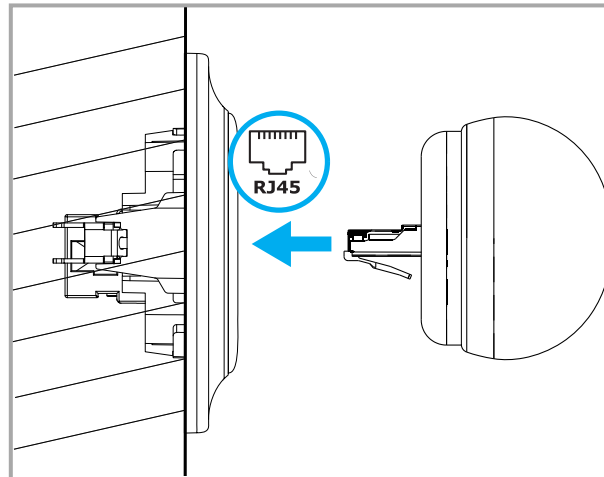
`PSN01320-00009 CD1.`

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

### 1.1.3 Installation

Install the SBL10e device on the Ethernet wall plugs of the buildings following the installation plan given by your IT department.

The SBL10e device has to be plugged to an Ethernet wall plug supporting PoE IEEE802.3af.



Given the device footprint, it is preconised to use Ethernet wall plug plastron with a right insertion.



Consequently, the Ethernet wall plug whose plastron is angled is not supported.

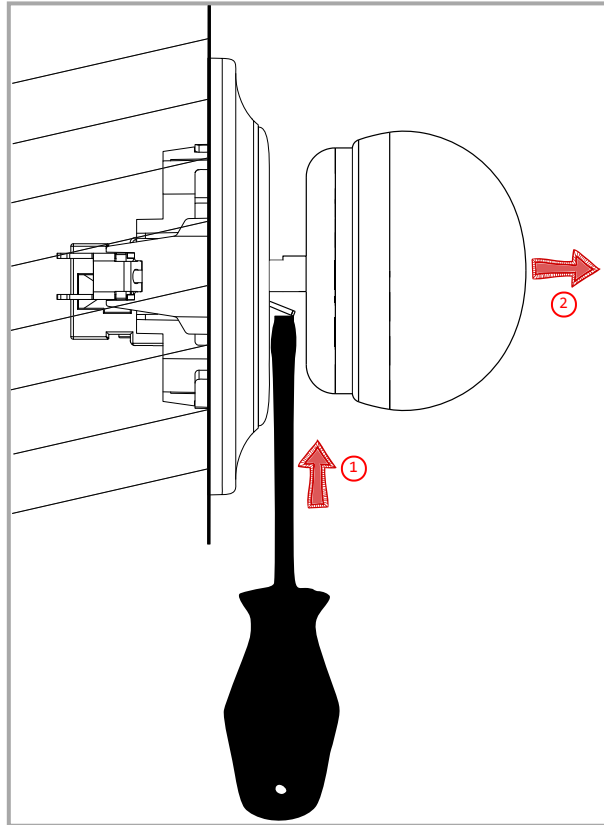


Thanks to the lock pin of its Ethernet connector, the SBL10e device can be installed on vertical surfaces, like walls as well as horizontal surfaces, like ceilings.



## 1.1.4 Uninstallation

With a screw driver, hold down the pin of the Ethernet connector ① of the SBL10e device at the same time you are releasing with the hand ② the SBL10e device from the Ethernet wall plug.



## 1.2 Smart Busy Light applications

The `regular` application is put by default at the factory. This application is applying the requested light state and color values:

- either when set through the device Web user interface available with `http://<device-ip-addr>/`,
- or when an appropriate Web command is received, for example with CURL tool native in MS-Windows,

However it is easily to replace by another application. For further information, refer to the chapter § [Maintenance > Firmware](#).

### Light states and colors

The `Smart Busy Light` applications support these states and colors:

Color	State
	OFF
Red	ON steady OR ON flashing
Green	ON steady OR ON flashing
Blue	ON steady OR ON flashing
Orange	ON steady OR ON flashing
Yellow	ON steady OR ON flashing

▮ The `ON flashing` state is flashing `ON` for 0,5 seconds then `OFF` for 0,5 seconds every one second.

▮ The light color and state values are stored in the volatile memory (RAM). That means that in case the SBL10e device is unplugged from the Ethernet wall plug then plugged back again, the light comes back to its default state: `OFF`.

### Configuration

The `Smart Busy Light` application supports the configuration update:

- by connecting to the Administration console user interface `http://<device-ip-addr>/`,
- when pushing, with a WebDAV client, a `prefs.json` configuration file on the device WebDAV directory `http://<device-ip-addr>/conf/`,
- when receiving a `configure` command from the `Qether` tool.

### Firmware upgrade

The `Smart Busy Light` application supports the firmware upgrade:

- by connecting to the Administration console user interface `http://<device-ip-addr>/` and loading an appropriate firmware file `bm0032_regular-sbl10e-xx.yy.zz.bin`<sup>1</sup>,
- by pushing a new firmware file `bm0032_regular-sbl10e-xx.yy.zz.bin`<sup>1</sup> at the root of the device WebDAV directory `http://<device-ip-addr>/`, pushed with a WebDAV client,
- by receiving an `install` command from the `Qether` tool.

<sup>1</sup> Can work also with any other compatible firmware `bm0032_<custom>-sbl10e-xx.yy.zz.bin`.

▮ After a firmware upgrade, the device is rebooting once.

▮ When the `configuration` command or the `install` command has been processed, the last `Smart Busy Light` state and color are restored.

### Preprogrammed flashing sequence

The SBL10e device has two modes:

- **Nominal mode**: the `Smart Busy Light` application runs properly and sets the light state and color as expected. When a configuration or a firmware upgrade is in progress, the light illumination can be temporarily inconsistent and follow the light flashing sequence below.
- **Recovery mode**: the `Smart Busy Light` application can not be executed. The light state or color can not be modified anymore. It is required to update the firmware to return to nominal mode.

Depending on these modes, the `Smart Busy Light` applications can fall into one of these a preprogrammed flashing sequences in some specific cases:

Mode	Smart Busy light behaviour	Information
Recovery	2 very short and consecutive blue flashes (250 ms) with a 4,5 seconds periodicity	The Smart Busy Light application can not be executed (it should never occur). The device Web user interface is so not available. This sequence is displayed until a new firmware update is realized with <code>qether</code> tool. For further information, contact <a href="mailto:support@qeedji.tech">support@qeedji.tech</a> .
Recovery	3 very short and consecutive blue flashes (250 ms) with a 5 seconds periodicity	The software resource of the SBL10e device set at factory are not valid. It should never occur. For further information, contact <a href="mailto:support@qeedji.tech">support@qeedji.tech</a> .
Nominal or recovery	4 very short and consecutive blue flashes (250 ms) with a 5,5 seconds periodicity	A SBL10e device <code>Firmware update</code> is in progress. Please wait a couple of seconds.
Nominal	5 very short and consecutive blue flashes (150 ms)	A SBL10e device <code>configuration</code> is in progress. Please wait a couple of seconds.

# Part II

## Applicative user interface

## 2.1 Applicative user interface

The SBL10e device has a Web user 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 device Web user interface are:

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

The URL falls automatically into the `regular` applicative user interface: `http://<device_IP_addr>/webui/` . This pane allows to:

- set the light status,
- set the light state.



# Part III

## Administration console user interface

### 3.1 Administration console user interface

The SBL10e device has a Web user 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 device Web user interface are:

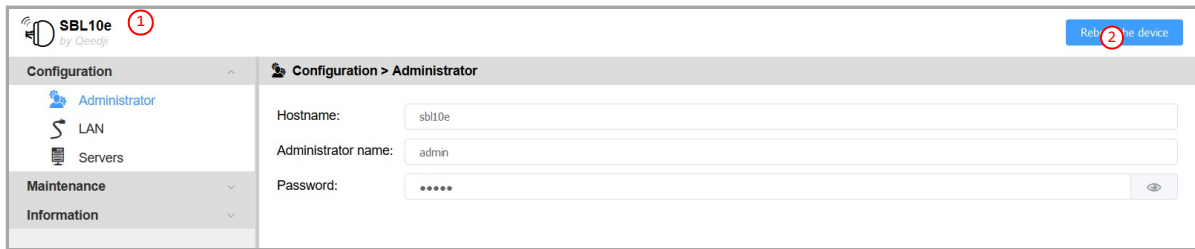
- login: `admin` ,
- password: `admin` .

The URL falls automatically into the applicative user interface<sup>1</sup>. At the top right corner, click on the `Administration Console` button.

Administration console

<sup>1</sup> For further information, refer to the chapter § [Applicative user interface](#).

This is the `Administration console` user interface.



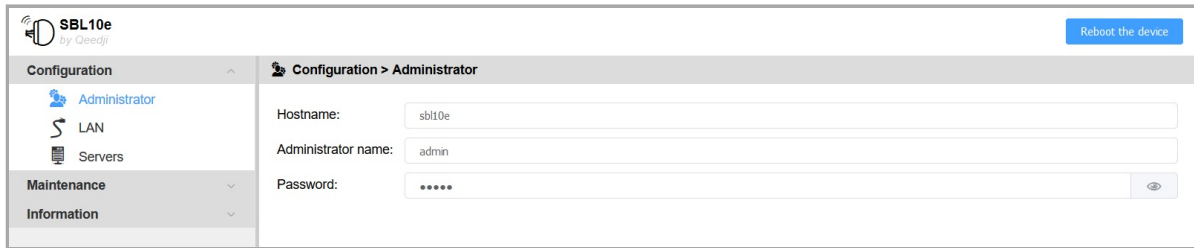
⚠ After you have changed and saved all your settings in the different panes, be sure to perform a device restart by clicking on the `Reboot the device` button so that your changes are fully reflected.

Click on the device logo ① at the left top corner to return to the applicative user interface.

### 3.1.1 Configuration > Administrator

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

- the hostname,
- the login credentials.



The screenshot shows the SBL10e web interface. The top left corner displays the logo and name 'SBL10e by Qeedji'. A 'Reboot the device' button is located in the top right corner. The main interface is divided into two sections. On the left is a navigation menu with the following items: 'Configuration' (expanded), 'Administrator' (selected), 'LAN', 'Servers', 'Maintenance', and 'Information'. The right section is titled 'Configuration > Administrator' and contains three input fields: 'Hostname' with the value 'sbl10e', 'Administrator name' with the value 'admin', and 'Password' with masked characters '\*\*\*\*\*'. A small eye icon is visible next to the password field.

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

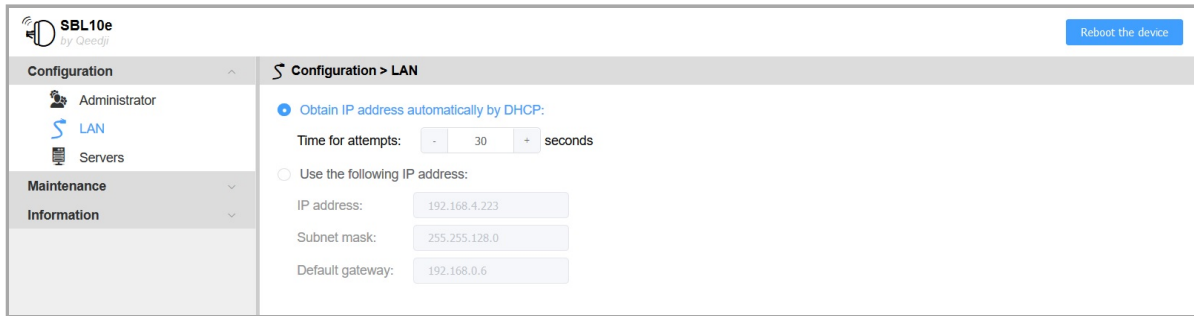
▮ *The same login credentials are used to access to the WebDAV server.*

It is recommended that you enter one unique `Hostname` value for each device. In case several SBL10e 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`).



### 3.1.2 Configuration > LAN

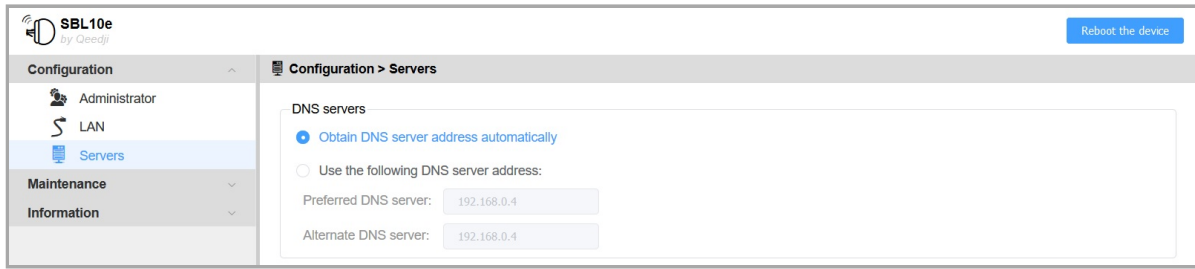
In the Configuration pane, select the **LAN** menu to set up the network configuration of the LAN interface of your device.



■ By default, the device is configured with DHCP activated. In case the DHCP server is not available, after the DHCP timeout, the device ends up using the static IP address whose default value is 192.168.0.2 when it has not been changed yet by the end user.

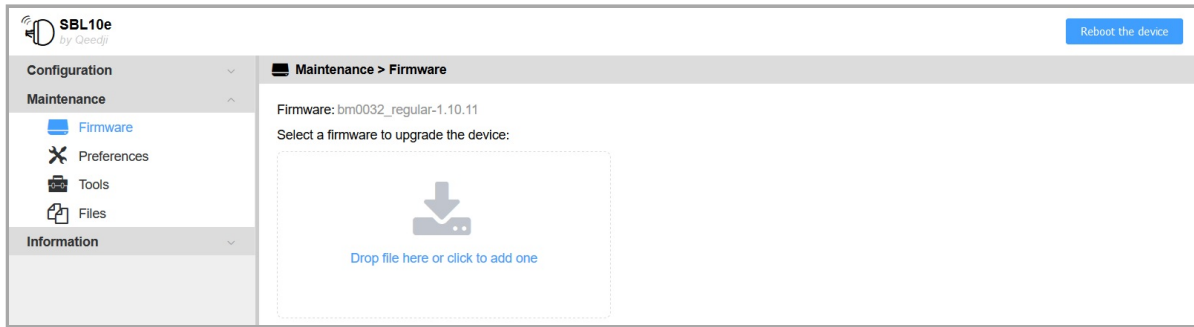
### 3.1.3 Configuration > Servers

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




### 3.1.4 Maintenance > Firmware

From the `Maintenance` pane, select the **Firmware** menu to view the version of the firmware installed on your device.



Corrective and evolutive maintenance software versions are regularly made available in the support tab of the official `Qeedji` website <https://www.qeedji.tech>. It is therefore advisable to regularly update your device. From this website, download the appropriate latest firmware version available for your device model ( `.bin` file). For further information, contact [support@qeedji.tech](mailto:support@qeedji.tech).

Drop your `.bin` file in the  Drop file here or click to add one button, then click on the `Send` button to update the firmware version of your device. Wait a couple of seconds, the time to load and install the new version. Go back to the `Administration console` user interface and check the new firmware version number of the device.

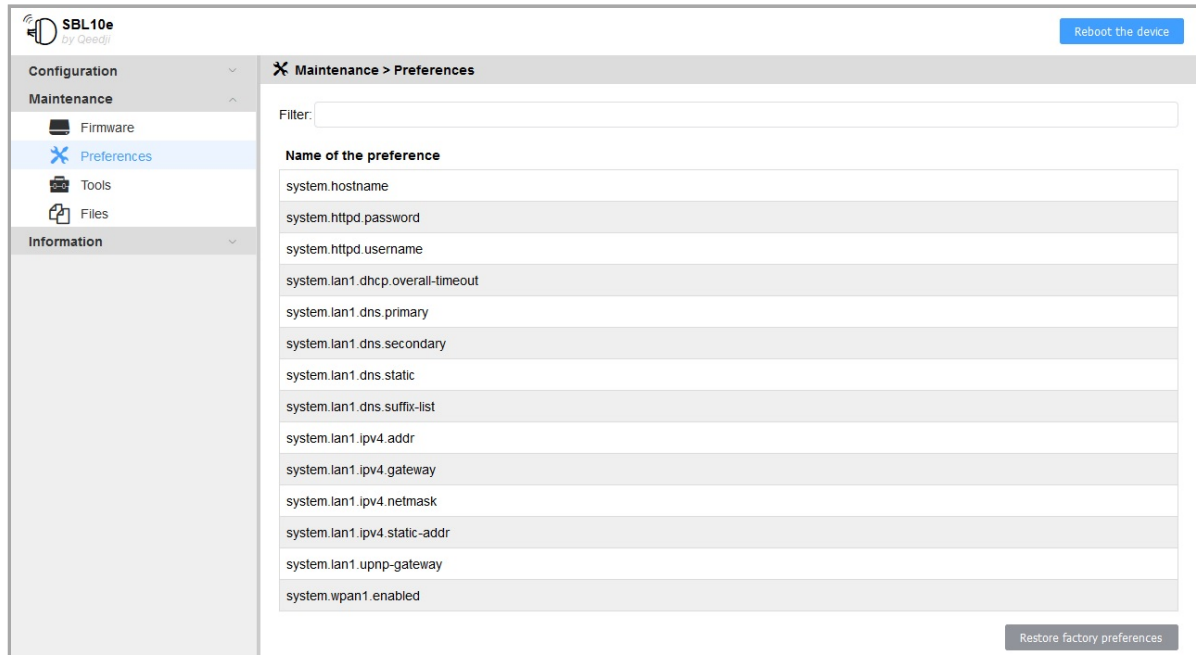
The user preferences common to the both applications are kept when upgrading from `regular` application to another application (and reciprocally) meaning:

- network configuration,
- file system,
- hostname,
- credentials.

 Do not electrically disconnect the device during the firmware upgrade.

### 3.1.5 Maintenance > Preferences

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



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

 Before changing any value of a preference, please consult your [Qeedji](#) support.

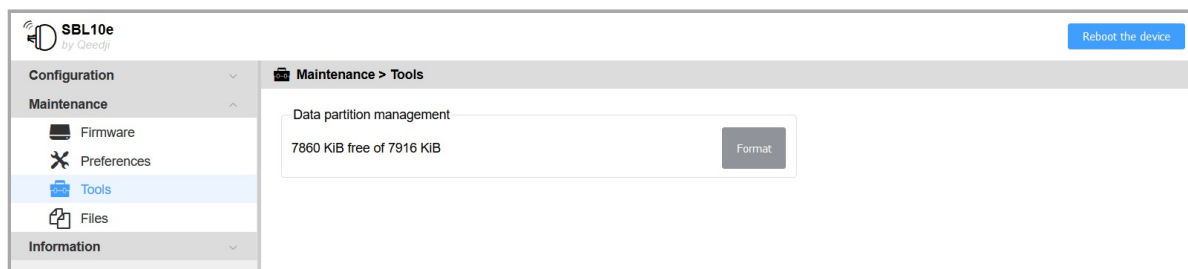
Double click on a preference to change its value.

The **Restore factory preferences** button resets a subset of preferences allowing the device to reprogram its factory preferences. In this case the LAN network configuration returns to DHCP.

### 3.1.6 Maintenance > Tools

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

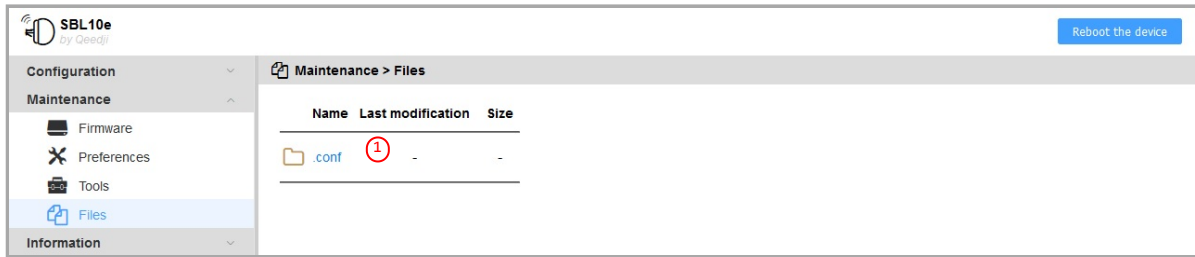
- view the available space on the flash memory storage<sup>1</sup> (max 8 MiB),
- format the flash memory storage<sup>1</sup>.



<sup>1</sup> The flash memory storage is used to store all the directories and files hosted at the root of the WebDAV directory, and the user preferences as well. In case flash formatting, all the file are deleted and consequently the SBL10e device returns to the default factory settings.

### 3.1.7 Maintenance > Files

In the Maintenance pane, select the **Files** menu to see the files hosted at the root WebDAV directory.

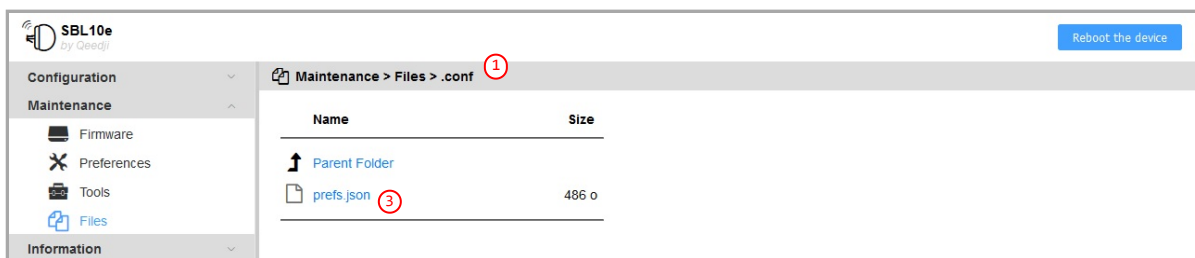


It contains a .conf <sup>1</sup> directory.

As soon as a modification is done through the Administration console user interface, a `prefs.json` file, corresponding to the new configuration, is created in the `.conf` folder.

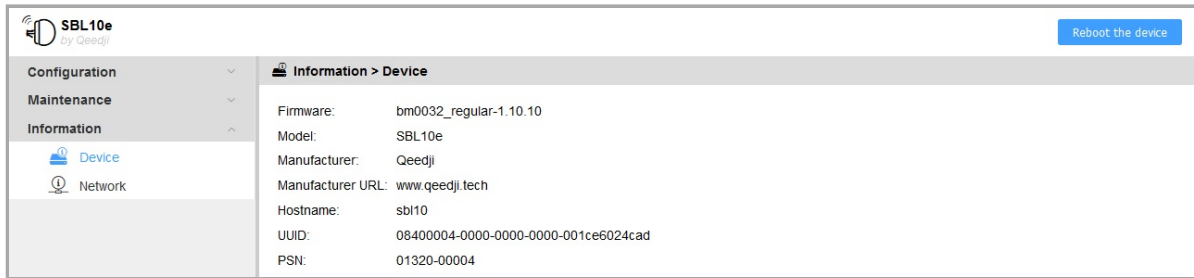
⚠ After having pressed on the Restore factory preferences button, the `prefs.json` file is erased.

⚠ The content of the `prefs.json` <sup>3</sup> configuration file can be different for `regular` application and other applications.



### 3.1.8 Information > Device

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



- **Firmware** : label and version of the firmware embedded in the device,
- **Model** : model of the Qeedji device,
- **Manufacturer** : product manufacturer name,
- **Manufacturer URL** : manufacturer Web site,
- **Hostname** : name of the device on the network,
- **UUID** : Universal Unique Identifier,
- **PSN** : Product Serial Number.

### 3.1.9 Information > Network

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





# Part IV

## Technical information

## 4.1 Technical specifications

<b>Model</b>	<b>Manufacturer</b>		
SBL10e	Qeedji		
<b>Power supply</b>	<b>Information</b>		
PoE IEEE802.3af	POE power supply input: ES1 / PS2 (48 V DC – 100 VA max)		
<b>Processors</b>			
CPU	Nordic Semiconductor nRF52		
Security processor	ARM CryptoCell 310		
<b>Storage</b>			
Flash Memory for file system	8 MBytes		
<b>Network</b>	<b>Other information</b>		
1x Ethernet	10/100 Base T, male connector		
<b>WPAN</b>			
Bluetooth Low Energy 5			
Frequency band: 2.402 to 2.480 GHz			
Tx Power: +8 dBm			
<b>Operating temperature</b>		<b>Storage temperature</b>	
+0 °C to +40 °C		-20 °C to +60 °C	
+32 °F to +104 °F		-4 °F to +140 °F	
<b>Operating humidity</b>		<b>Storage humidity</b>	
< 80 %		< 85 %	
<b>Weight</b>	<b>Dimensions (W x H x D) (RJ45 male connector included)</b>		
35 g	60,5 mm x 60,5 mm x 67 mm		
0,077 lb	2,36" x 2,36" x 2,63"		
<b>Enclosure flame rating</b>			
Base: PVC UL 94-5VA, bulb: Polycarbonate UL 94 V-2			
<b>Warranty</b>			
1 year			

## 4.2 Conformities

### EUROPE

In conformity with the following European directives:

- LVD 2014/35/EU ,
- EMC 2014/30/EU ,
- RED 2014/53/EU .

### USA

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference's by one or more of the following measures:

- reorient or relocate the receiving antenna,
- increase the separation between the equipment and the receiver,
- connect the equipment into an outlet on a circuit different from that to which the receiver is connected,
- consult the dealer or an experienced radio/TV technician for help.

This equipment complies with FCC's radiation exposure limits set forth for an uncontrolled environment under the following conditions:

- this equipment should be installed and operated such that a minimum separation distance of 20 cm is maintained between the radiator (antenna) and user's/nearby person's body at all times,
- this transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- this device may not cause harmful interference,
- this device must accept any interference received, including interference that may cause undesired operation.

Qeedji is not responsible for any changes or modifications not expressly approved by the party responsible for compliance. such modifications could void the user's authority to operate the equipment.

### CANADA

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

- this device may not cause interference,
- this device must accept any interference, including interference that may cause undesired operation of the device.

# Part V | **Contacts**

## 5.1 Contacts

For further information, please contact us:

- **Technical support:** [support@qeedji.tech](mailto:support@qeedji.tech),
- **Sales department:** [sales@qeedji.tech](mailto:sales@qeedji.tech).

Refer to the Qeedji Web site for FAQ, application notes, and software downloads: <https://www.qeedji.tech/>

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# Part VI | Appendix

## 6.1 Appendix: Web services

These are the supported Web services for the `regular` application to command and control the SBL10e:

Webservice path	HTTP method				Query string parameters	Body	Function	From the Smart Busy Light Regular version
	GET	POST	PUT	DELETE				
<code>api/v1/sys/power</code>			yes		<code>&lt;state&gt;=rebooting</code>	<code>""</code>	Reboot the device	1.10.10
<code>api/v1/software/version</code>	yes				None	<code>"1.10.10"</code>	Get the device delivery software version	1.10.10
<code>api/v1/software/label</code>	yes				None	<code>"bm0032_regular"</code>	Get the device delivery software label	1.10.10
<code>api/v1/sys/sn</code>	yes					PSN Short representation, example: <code>"01320-04800"</code>	Get the device SN	1.10.10
<code>api/v1/sys/model-name</code>	yes				None	SBL10e	Get the device model name	1.10.10
<code>api/v1/sys/manufacturer</code>	yes				None	Qeedji	Get the manufacturer	1.10.10
<code>api/v1/sys/manufacturer-url</code>	yes				None	<a href="http://www.qeedji.tech">www.qeedji.tech</a>	Get Web Site of manufacturer	1.10.10
<code>api/v1/sys/uuid</code>	yes				None	Uuid string value: <code>&lt;uuid&gt; = &lt;psn&gt;-&lt;4x0&gt;-&lt;mac-48&gt;</code> Example: <code>"05010024-0000-0000-0000-001ce021bf6"</code>	Get the device UUID	1.10.11
<code>api/v1/wpan1/mac</code>	yes				None	Bluetooth MAC address value user formatted: <code>"aa:bb:cc:dd:ee:ff"</code>	Get the device Bluetooth MAC address	1.10.11
<code>api/v1/leds/light</code>	yes		yes		<code>&lt;state&gt;= off   steady   flashing</code> <code>&lt;color&gt;=red   orange   blue   yellow   green</code>	Put: <code>""</code> Get (plain text, separator CR): <code>state=&lt;state&gt;</code> <code>color =&lt;color&gt;</code>	Get/Set busylight led color and state	1.10.10
<code>api/v1/sys/manufacturer-url</code>	yes				None	<a href="http://www.qeedji.tech">www.qeedji.tech</a>	Get Web Site of manufacturer	1.10.10

### Examples by using Curl tool

- update only the light state:

```
curl --user "<USERNAME>:<PASSWORD>" -i -X PUT "http://<DEVICE_IP_ADDR>/api/v1/leds/light?state=flashing"
```

- update only the light color to green:

```
curl --user "<USERNAME>:<PASSWORD>" -i -X PUT "http://<DEVICE_IP_ADDR>/api/v1/leds/light?color=green"
```

- set the light state & color:

```
curl --user "<USERNAME>:<PASSWORD>" -i -X PUT "http://<DEVICE_IP_ADDR>/api/v1/leds/light?state=steady&color=red"
```

Examples with CURL tool:

- get light state & color:

```
curl --user "<USERNAME>:<PASSWORD>" -X GET "http://<DEVICE_IP_ADDR>/api/v1/leds/light"
```

- get device firmware version:

```
curl --user "<USERNAME>:<PASSWORD>" -X GET "http://<DEVICE_IP_ADDR>/api/v1/software/version"
```

