DEVA

The revolutionary multimedia unit:
energetically self-sufficient, zero installation costs, solar power ready

USER GUIDE

July 2014

DO000147 Rev. 1

Keep This Manual
For Future Reference

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1 Unpacking & checking

Your Powersoft product was completely tested and inspected before leaving the factory. Carefully inspect the shipping package before opening it, and then immediately inspect your new product. If you find any damage notify the shipping company immediately.

2 Disposal of the packing material

The transport and protective packing has been selected from materials which are environmentally friendly for disposal and can normally be recycled.

Rather than just throwing these materials away, please ensure they are offered for recycling.

3 Package content

The main package contains:

- DEVA
- Connectors kit
  - Power supply plug:
    Phoenix MCVW-1.5/ 2-STF-3.81
  - Loudspeaker plug:
    Phoenix 1803578 MC 1,5/ 2-ST-3,81
  - RS-485 plug:
    Phoenix 1817042 1840405 MC 1,5/ 6-ST-3,5
- Manual

Optional:

- Pole and wall mounting kits
- Mounting clamp for stand
- Solar panel
- DEVA Passive
- ANSMANN APS2250H DC power supply and adapters

4 Welcome

Congratulations on your purchase of the Powersoft DEVA.

DEVA is a lightweight and compact multifunctional device that implements bi-directional wireless communication, audio messaging and video capturing.

Once configured, DEVA is a self-sufficient device equipped with sensors – microphone, presence detector, temperature and pressure probes – and accessories (e.g. LED light, camera, etc.) that make it capable to interact with the environment through the built in loudspeaker and audio/video capturing feature.

DEVA has been designed to be independent from any existing infrastructure, without the need for wiring and with virtually zero installation costs. DEVA uses green technologies: its highly efficient design limits power consumption allowing uninterrupted use powered by the internal rechargeable battery; a latest generation solar panel can quickly recharge the battery even in low light conditions.

DEVA's enclosure is weather-resistant IP65, an ideal solution for outdoor applications from background music to paging, in combination with video and/or audio surveillance.

DEVA provides bi-directional messaging and ambient control; DEVA allows configuration and monitoring via WiFi as well as wired Ethernet connections to tablets, pc and mobile phones. Remote control is available via GSM/GPRS/UMTS.

DEVA is a self-sufficient fully configurable networking unit that can be installed anywhere!

5 DEVA in a glance

DEVA is capable to perform tasks and react to certain events on the basis of a scheduled program and an event list. The interaction with the environment triggers a set of actions spanning from sound playback to taking pictures. In systems with more than one DEVA, scheduled actions – such as playing audio files – are synchronized by means of the **DEVA System Manager**, the control pannel that provides full management of DEVA, installed into the **Powersoft DEVA Director** – PDD.

The DEVA System Manager allows you to stream live announcements and audio files to all selected DEVA as well as set:

- **time schedule for actions:**
  - **Light** – switch the light on or off.
  - **Play message** – play a file in the default audio files list.
  - **Play from Audio library** – play a file from the audio library.
  - **Play playlist** – execute a playlist of audio files.
  - **Take Photo** – shoot a single ambient photo or choose to shoot a number of pictures delayed by the selected time.

Refer to Chapter "7 Actions and Players" for detailed info.

- **action triggers (events):**
  - **Presence sensor**
  - **Battery charge**
  - **Network connectivity**
  - **Mechanical shocks**

Refer to Chapter "8 Commanders and Triggers" for detailed info.

When triggering events take place, DEVA can execute one or more of the following actions:

- ▷ **Light**
- ▷ **Play message**
- ▷ **Record with the built in microphone**
- ▷ **Take Photo**
- ▷ **Notify** – send an sms to a registered user.

Refer to Chapter "8 Commanders and Triggers" for detailed info.

6 Dashboard

The DEVA dashboard is located under the rear panel of the DEVA; it allows the user to access the main connections (i.e. solar panel, ethernet, etc), the power switch and other features (refer to the next chapters for further details).

Refer to FIGURE 1 to locate the following features on the dashboard.

1. Factory Default Setting push-button
   Chapter "29 DEVA reset"
2. ON/OFF push-button
   Chapter "14 Start-up"
3. Volume +/– push-button
   Chapter "16 USB MP3 playback"
4. Seek track push-button
   Chapter "16 USB MP3 playback"
5. Loudspeaker plug
   Chapter "34 DEVA passive"
6. RS-485 and switch plug
7. USB connector
   Chapter "16 USB MP3 playback"
8. 5.5 mm coaxial power supply plug (16 V_{DC}, 1 A_{max})
9. Rear status LEDs – Red, Yellow, Green
   Chapter "10 Dashboard LEDs"
10. Network activity LED
11. Ethernet port
12. SIM bay
    Chapter "13 SIM card assembly"
13. Wi-Fi default setting selector
    Chapter "29 DEVA reset"
14. Cable fastener
15. Phoenix MC 1,5/ 2-ST-3,81 solar panel connector
    Chapter "33 Solar panel"
16. Testing connectors for servicing

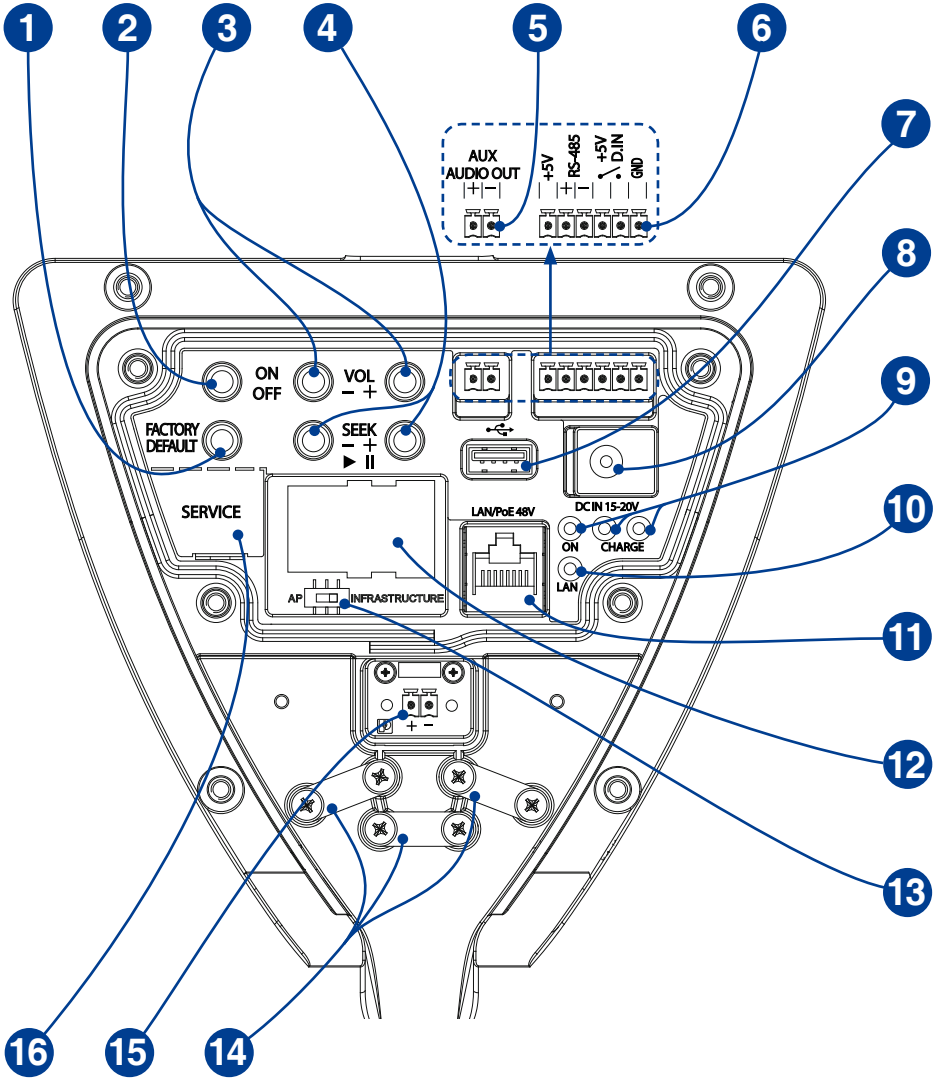
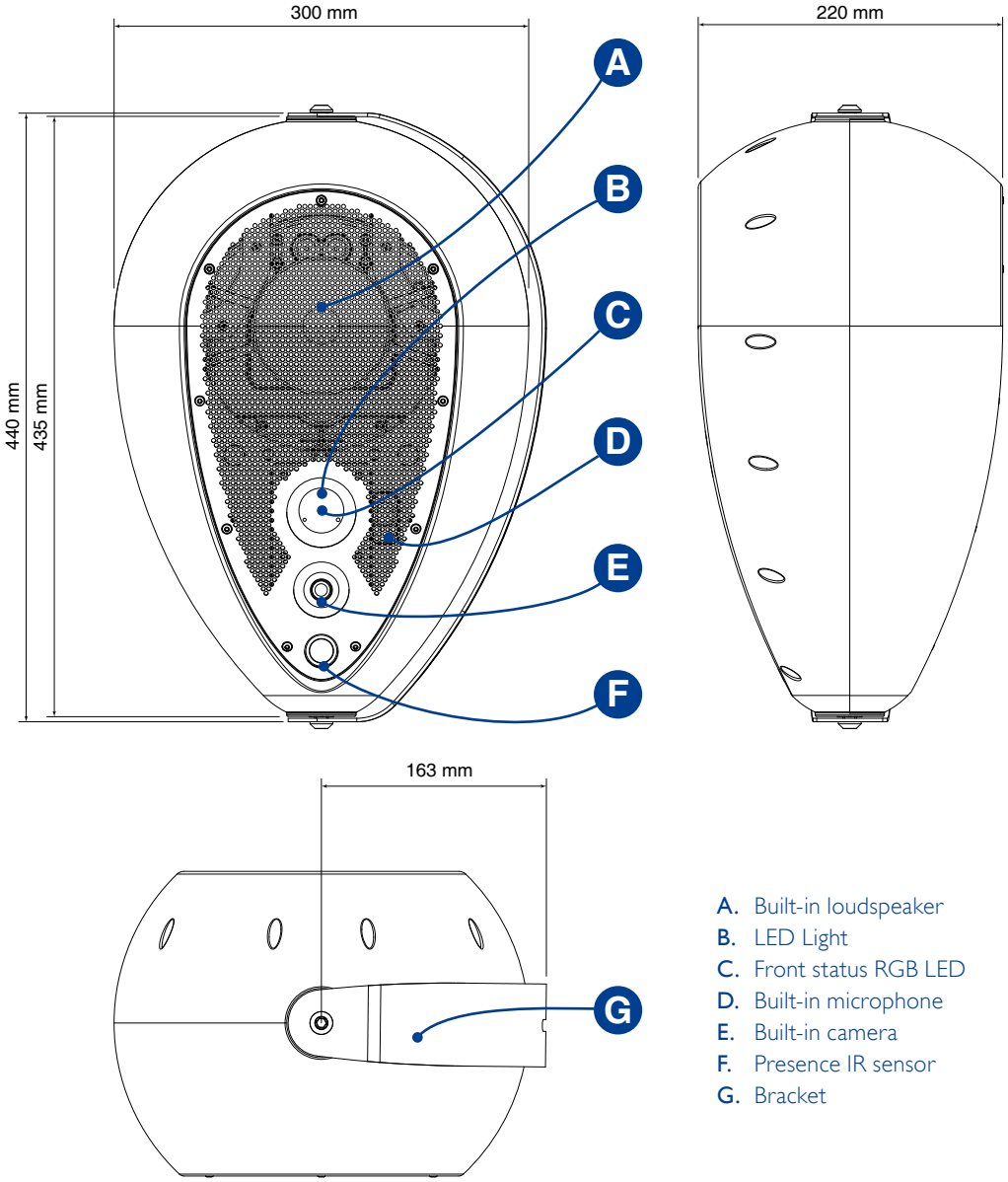


FIGURE 1: DEVA dashboard.



A. Built-in loudspeaker
B. LED Light
C. Front status RGB LED
D. Built-in microphone
E. Built-in camera
F. Presence IR sensor
G. Bracket

FIGURE 2: Mechanical drawing

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7 Actions and Players

7.1 Actions

Depending on the version, DEVA performs a set of defined actions:

- Play audio
- Switch the light
- Take photo
- Record audio
- Notify with a message (sms/email)

7.2 Players

DEVA provides four audio players that manage respectively:

1. live stream of audio
2. playback of single audio file
3. playback FM radio
4. playlist of audio files

The four players can be active at the same time, but only two of them will play simultaneously, according to their priority:

live stream > single file > FM radio > playlist

HIGH PRIORITY > LOW PRIORITY

The four audio players are layered on the basis of the playback priority:

- the playback of a live streaming (either an audio file or from the microphone) has the priority on the playback of an audio file from the library;
- the playback of a single audio file has the priority on the playback of the FM radio;
- the playback of an FM radio has the priority on the playback of a playlist.

The player with the lower priority plays in background (i.e. lower in volume) when a high priority player starts playing.

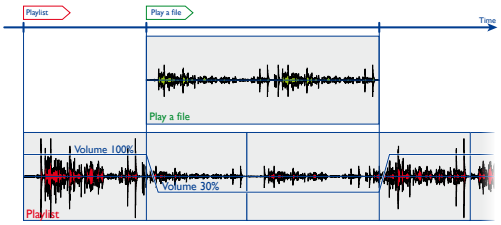


FIGURE 3: The playback of a single audio file has the priority on a playlist: the volume of the playlist is lowered to the 30% and the playback does not stop.

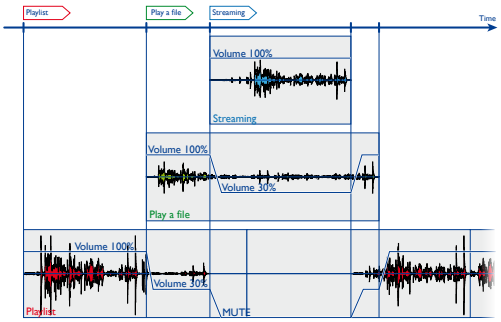


FIGURE 4: DEVA can reproduce up to two fluxes of audio simultaneously: in this example the playback of the playlist is muted whilst playing the audiofile and the live streaming.

NOTE: The default behaviour can be overridden by changing the volume level during the playback. Each player provides independent volume control. The playback volume of each player is a fracion (expressed in percentage) of the master volume.

8 Commanders and Triggers

8.1 Commanders

DEVA receives commands to perform actions. Commanders access a subset of actions.

8.1.1 Live execution

The DEVA System Manager provides direct access to all actions on DEVA; through the DSM you can:

- Play audio
  - stream an announcement/audio file
  - play a predefined message
  - execute a playlist
  - play an FM radio
- Switch the light
- Mute audio playback
- Take a photo

Refer to Chapter "26 Live execution".

8.1.2 Time schedule

The DSM provides a tool to set the executions of actions on a time schedule. Available actions are:

- Play audio
  - play a predefined message
  - execute a playlist
  - playpack a single audio file
  - playback an FM radio
- Switch the light
- Record audio
- Take photo

Refer to Chapter "24 Setting time schedule".

8.1.3 Events

Ambient events can be exploited to activate some actions:

- Play audio
  - play a default message
- Switch the light
- Record audio
- Take photo/video
- Notify with an sms

Refer to Chapter "25 Setting Events".

8.1.4 USB key

DEVA can start playing audio files from any USB storage device, such as a USB key, plugged into the USB port on the DEVA dashboard.

Refer to Chapter "16 USB MP3 playback".

8.2 Triggers

Triggers are conditions that activate functions of the DEVA. The tool Events uses triggers.

Events/conditions that trigger DEVA actions can be chosen among:

- the signal from the presence sensor
- internal battery voltage (threshold: 11.8V)
- Wi-Fi and LAN network connectivity
- mechanical shocks
- external switch

When a triggering condition takes place, DEVA perform the programmed action.

Triggers are filtered by time: you can set the time interval during which the triggering conditions are taken into account.

9 Warning beeps

Many system functionalities are warned by acoustic signals (beep)s. In the following table a dot • represents a short beep, a dash — represents a long beep.

system status	beeps combination
BUTTON PRESSED	•
SYSTEM BOOTING	—
REBOOT	• • •
STARTING SOFT RESET	• •
STARTING HARD RESET	• —

10 Dashboard LEDs

The status LEDs in the dashboard (ref. FIGURE 5) provide the following information:

battery status	RED
CHARGING	SOLID ON
FULL CHARGE	SLOW BLINKING
IDLE	DISCONTINUOUS BLINKING
NO BATTERY	OFF

system status	YELLOW	GREEN
NO POWER SUPPLY	OFF	OFF
BOOTING	OFF	BLINKING
SYSTEM ON	OFF	SOLID ON
SYSTEM OFF CAUSED BY USER SHUTDOWN	SLOW BLINKING	OFF
SYSTEM OFF CAUSED BY LOW BATTERY CHARGE	BLINKING	OFF
SHUTTING DOWN	SOLID ON	IRREGULAR BLINKING

11 Front RGB LED

The front LED is positioned in the center of the light LED (ref. FIGURE 2). The activity of the front LED is triggered by the presence sensor: **the LED lights just when the sensor reveals the presence of people in front of the DEVA**.

The color code refers to the battery state; the lightening state refers to the LAN (both wired and wireless) connectivity status.

connectivity status	RED	BLUE	GREEN
LAN CONNECTIVITY PRESENT	SOLID ON	SOLID ON	SOLID ON
NO LAN CONNECTIVITY	BLINKING	BLINKING	BLINKING

battery status	Color
BATTERY CHARGE AT WARNING LEVEL (11.8V)	**RED**
NO CHARGING	**BLUE**
CHARGING	**GREEN**

During system update the LED color turns purple and blinks until the end of the process.

SYSTEM UPDATING		**PURPLE (blinking)**

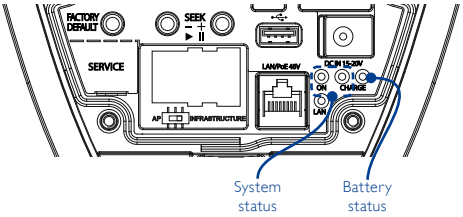


FIGURE 5: Status LEDs.

Getting Started

Before proceeding to the placement of the DEVA on site (ref. Chapter "32 Mounting kits"), we recommend to setup the device by following the assembling and initialization procedure "on the desk".

The initialization phase can involve the manual setup of the device; once properly initialized and configured, DEVA has been designed to be self-operating and remotely managed.

The initialization workflow includes:

1. battery assembly on the DEVA;
2. SIM assembly;
3. DEVA start-up;
4. initialization of the connections (networking);

We suggest to follows the instruction on this manual in order to properly setup the DEVA.

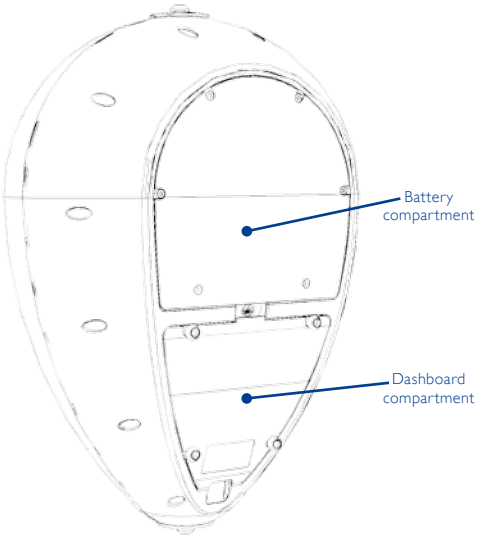


FIGURE 6: DEVA back view.

12 Battery assembly

DEVA comes with a battery pack already located into its battery compartment (ref. FIGURE 6). The battery pack shall be properly connected before operating.

1. Open the battery compartment.
2. Verify that the battery presents no failures.
3. Plug the battery:
   - ▷ connect the **red + (positive)** faston to the battery's positive plug (beware the 4 A fuse);
   - ▷ connect the **black – (negative)** faston to the battery's negative plug.
4. Place the battery temperature probe wherever into the battery compartment, far from the electric plugs.
5. Reposition the compartment cover and tightly screw the six hex screws.

In order to ensure full operability, Powersoft recommends to fully charge the battery before starting the initialization procedure.

The battery charge can be achieved by means of either:

- an external power supply capable to deliver 20 V_{DC} and up to 3 A_{max} (e.g. solar panel, DC power supply unit, etc.) connected to the Phoenix MC 1,5/ 2-ST-3,81 (ref. FIGURE 1 #15);
- a 16 V_{DC}, 1 A_{max} power supply plugged to the 5.5 mm coaxial plug (ref. FIGURE 1 #8);
- a 48 V_{DC} PoE via the Ethernet connection (ref. FIGURE 1 #11).

13 SIM card assembly

DEVA supports GSM and GPRS communication protocols via a standard SIM – Subscriber Identity Module – card*. Follows these instructions in order to install the SIM card.

1. **Unlock the SIM by disabling the PIN request** at the switch on: this can be mabe easily by inserting the SIM into a mobile phone and disabling the PIN request.

2. Access the dashboard compartment and gently slide and tilt the SIM card tray (ref. FIGURE 7).

3. Insert the SIM card into the slot a reposition the tray.

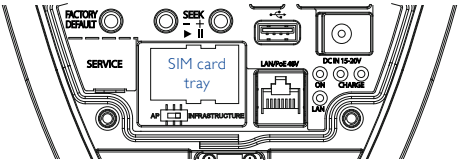


FIGURE 7: SIM card tray on dashboard.

The GPRS communication features shall be activated and managed through the DEVA System Manager (ref. Chapter "27.2 Setting DEVA network parameters")

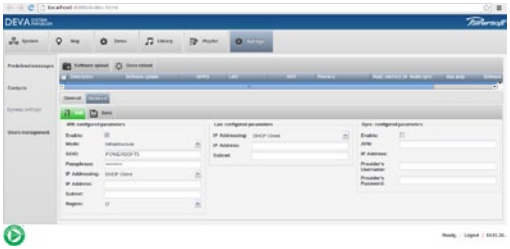


FIGURE 8: System settings: network parameters.

* Not included in the package. Ask to your local IT providers.

14 Start-up

Once the battery has been properly assembled (ref. Chapter "12 Battery assembly"), the DEVA can be switched on. **By default, DEVA starts-up when any external power supply (i.e. solar panel, DC power supply unit, PoE) is plugged in**.

When the DEVA is connected to an external power supply, the system starts charging the internal battery: when the power supply delivers more than 12 V_{DC} the DEVA starts-up automatically.

In approximatively 90 seconds the operating system completes the bootstrap procedure and makes the device ready to work. During the bootstrap you can hear a long beep coming from the DEVA: the presence of this signal means that the system is booting.

14.1 DEVA start-up without external power supply

In case no power supply is available and DEVA is off, you can switch on the DEVA by means of the ON/OFF button (ref. FIGURE 9).

1. Push on the ON/OFF button and keep it pressed:

2. the green LED switch solid on;

3. still keep the ON/OFF button pressed until the green LED start blinking (5 s approximatively);

4. release the ON/OFF push button: the bootstrap procedure takes place and a long beep is emitted.

Be aware that the start-up procedure without power supply will not take place if the battery charge is below 12 V_{DC}.

15 Shut down

Usually you don't need to shut down the DEVA for maintenance: the management can be performed by means of the DEVA System Manager.

1. Access the DEVA on site and remove the dashboard cover on the back of the DEVA (ref. FIGURE 6).

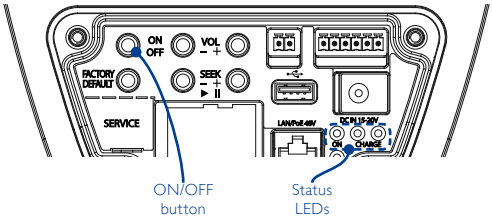


FIGURE 9: ON/OFF button and status LEDs on dashboard.

2. In order to completely shut down the DEVA we suggest to unplug any external power supply (e.g. solar panel).

3. On the DEVA dashboard, identify the On/Off push-button (ref. FIGURE 9): keep pressed the button until the three rear LEDs start blinking.

4. Release the On/Off push-button and wait until all the LEDs switch off (approximatively one minute). The system will emit 2 short beep followed by a long beep to warn you about the shut down in progress

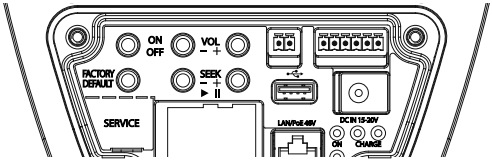


FIGURE 10: Press simultaneously the SEEK+ and SEEK– push button to toggle PLAY and STOP from USB

16 USB MP3 playback

The playback from the USB override any audio playing on the DEVA: in order to start the playback of the files from a USB device you have to press simultaneously the SEEK+ and SEEK– push button on the DEVA dashboard.

The actual scheduled action does not stop: while the USB audio content is playing, any scheduled playlist runs to the 30% of its preset volume.

In order to allow DEVA to reproduce the MP3 files from the USB, the audio files shall be stored in the `AudioFiles` folder in the root of the USB storage device.

DEVA can play only MP3 files, no other file formats are allowed. Playback of the audio files is looped in alphabetical order. The commands to manage the playback from USB are located on the DEVA dashboard (ref. FIGURE 10):

PLAY/STOP

- ▷ press simultaneously the SEEK+ and SEEK– push button to toggle PLAY and STOP

VOLUME

- ▷ push once on VOL+ or VOL– button for a 1% volume change accordingly
- ▷ push and keep pressed on VOL+ or VOL– button for a 5% volume change per second accordingly

TRACK SEEK

- ▷ press on the SEEK+ and SEEK– push button to skip track

Take care to properly stop the audio file playing from the USB before unplug the USB device!

By unplugging the USB device without having properly stopped the playback you may cause the USB stop working until next system reboot.

17 Networking

DEVA can be set as a stand alone device or integrated into any existing wired, wireless or mixed network. A proper network setup includes:

- **Powersoft DEVA Director – PDD.** The PDD is a personal computer implementing a custom GNU/Linux based operating system: the PDD provides a client-server environment that allows the user to easily manage the network of DEVA.

  Both the DEVA and the PDD must be connected to the same network; this means that all devices have to be either hosted by the same Wi-Fi access point or wired to the same thernet switch and sharing the same subnet and IP range.

- **DHCP server (often already implemented into routers and acces point)**. Both the DEVA and the PDD are set to dynamic IP addressing.

- **Ethernet switching (often already implemented into routers and acces point)** with a proper number of ports for wired connectivity;

- **Wi-Fi access point** for wireless connectivity;

- **One or more DEVA**.

In the following pictures we suggest some network topologies oriented to a domestic environment, where the router/AP implements both the DHCP server and the Ethernet switch.

17.1 DEVA in a wireless LAN

DEVA and the PDD are connected wireless to the access point. Any further client on the wireless network can manage the network of DEVA: in order for the client to manage a DEVA it must to connect to the PDD.

17.1.1 Mesh network

DEVA can connect to a mesh network, so that to cooperate in the distribution of data in the network. In a mesh network topology, each DEVA is a node that relays data on the network, providing multiple connections to other DEVA in the mesh.

17.2 DEVA in a wired LAN

Both the DEVA and the PDD must be connected to the switch. The DHCP on board of the router assign a unique IP address to each DEVA and PDD in order for them to belong to the same subnet.

Through the PDD it is possible to manage the network of DEVA, set schedules and events, monitor the performance and launch an announcement on specified DEVA.

Refer to Chapter "27 Advanced network settings" for more information on how to configure the DEVA network parameters and the PDD in order to match your network environment.

18 Initialization

The initialization is performed by means of the PDD – Powersoft DEVA Director –, by connecting the DEVA to the local network through a wired or wireless connection.

You may need the following equipment:

- Powersoft DEVA Director – PDD;
- DHCP server or a router with DHCP capability;
- switch with a proper number of ports for wired connections;
- access point – AP – for wireless operating.

18.1 Initialization in a wireless LAN

By default DEVA tries to connect to a Wi-Fi network whose SSID is set to POWERSOFT.

In order to perform the initialization procedure we recommend to set your AP as follow.

1. Connect the PDD and the AP to the same LAN (wired or wireless): ensure that they share the same IP range.
2. Log-in the PDD and launch the browser.
3. Point your browser to the IP address of the access point and enter its control panel.
4. **Modify the SSID of the access point to "POWERSOFT" and password "powersoft".** Save and reboot the access point. While rebooting you will loose the connection: after some second, refresh the page on the browser and reconnect to the AP.
5. By default DEVA looks for the POWERSOFT Wi-Fi network. Through the AP control panel you should monitor all connected devices.

6. Open the DEVA System Manager: on the browser address-bar write **http://localhost:8080**

7. Log in the DEVA System Manager: the administrator account has the following default credentials:

   username: **admin**
   password: **admin**

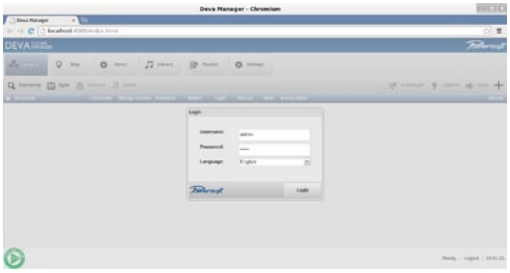


FIGURE 11: DEVA system Manager login window.

Once logged in, the DEVA System Manager shows the latest saved network configuration: since you are going to initialize your network, no one DEVA is listed.

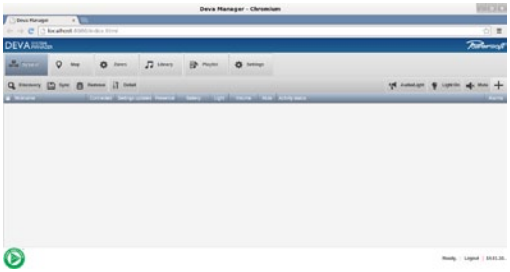


FIGURE 12: DEVA System Manager at first login.

8. Click the button **Discovery** on the Toolbar: the DEVA System Manager will start seeking and connecting new devices on the network.

Now you can start setting DEVA.

18.2 Initialization in a wired LAN

In order to perform the initialization procedure in a wired network environment, all devices have to be connected to a DHCP server (possibly through an Ethernet switch) in order to receive unique IP addresses within the same subnet.

1. Connect the PDD and the DHCP server to the same network: ensure that they share the same IP range, i.e. the PDD receives its IP address from the local DHCP server.

2. Connect each DEVA to the same network of your PDD and switch them on (ref. Chapter "14 Start-up").

3. Now follow the same procedure described in Chapter "18.1 Initialization in a wireless LAN" starting from point **6**.

Setting DEVA

Almost any settings on DEVA are performed by means of the DEVA system Manager – DSM. The audio playback from a USB key and the hard-reset of the system are available just through the DEVA dashboard.

The DSM offers a user friendly interface for setting time schedules for actions, event triggers and full access to DEVA features (ref. Chapter "5 DEVA in a glance").

19 Setting users permissions

By assign roles to registered users, it is possible to control what users can do through the DEVA System Manager.

Each registered user belongs to just one role. Permissions are global, i.e. they grant access to selected features on all networked DEVA. The DEVA System Manager provides three default roles: ADMIN, USER and GUEST.

Only the adminstrators can register new accounts and assign roles to users. Refer to TABLE 1 for an overview on user roles and permissions.

In order to register new users and set roles:

1. Click on the **Settings tab** in the main bar. The main window switch to the Settings panel.

2. On the left column, click on **Users Management** (ref. FIGURE 14).

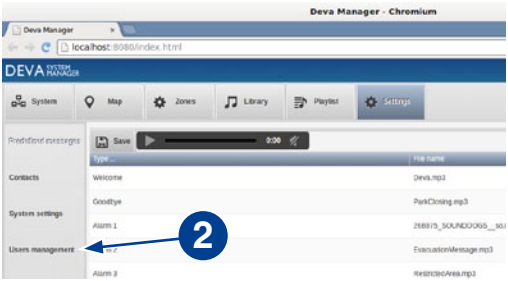


FIGURE 14: Set users account.

3. Add new account or manage registered users by inserting:

   - Login name
   - Login password
   - Real name
   - Role

4. Save by clicking on the **Update** button (ref. FIGURE 15)

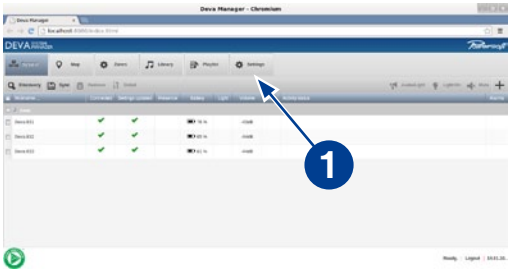


FIGURE 13: Discover connected DEVA and start settings.

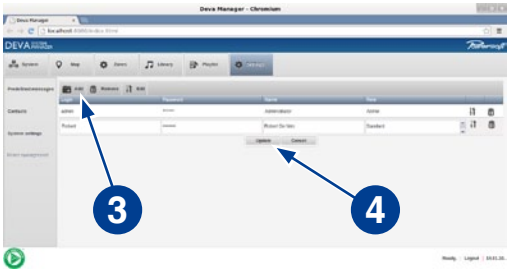


FIGURE 15: Add new user.

Functions	User role		
	ADMIN	USER	GUEST
Zones management	✓	✓	
Audio Library management	✓	✓	
Playlists management	✓	✓	
Live volume management	✓	✓	
Live light management	✓	✓	
Events management	✓	✓	
Schedulings management	✓	✓	
System settings/ configurations	✓		
System and Alarms monitoring	✓	✓	✓
Live audio playing (file/ playlist/stream/fm radio)	✓	✓	
Audio Mute	✓	✓	
DEVA Diagnosis	✓	✓	✓
Take photos	✓	✓	✓
Delete photos	✓	✓	
Take audio recordings	✓	✓	✓
Delete audio recordings	✓	✓	
Run DEVA auto-test	✓		

TABLE 1: User roles amd permissions.

20 DEVA general settings

A. Click on the **Settings tab** in the main bar. The main window switch to the Settings panel (ref. FIGURE 16).

B. On the left column, click on **System settings** (ref. FIGURE 17).

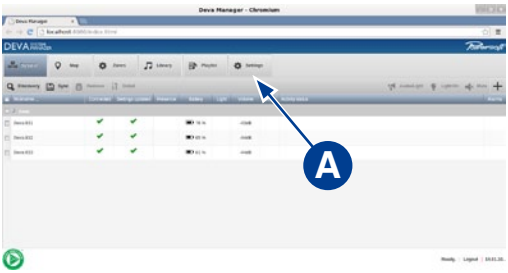


FIGURE 16: Discove connected DEVA and start settings.

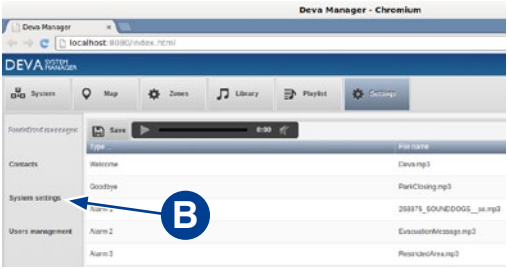


FIGURE 17: Click on System settings.

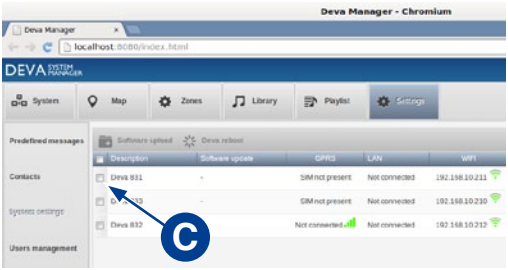


FIGURE 18: Select one DEVA.

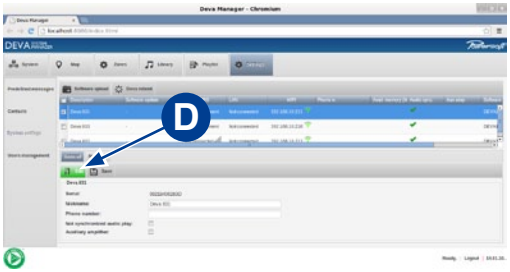


FIGURE 19: Edit DEVA general settings.

C. Select the DEVA you want to edit (ref. FIGURE 18). A new panel appear providing you information on the device.

D. Click on the **Edit** button in order to start editing the DEVA general settings (ref. FIGURE 19):

- ▷ DEVA nickname.
- ▷ Phone number of the SIM Card, if present.
- ▷ Not Synchronized audio playback, in case of busy or not reliable network connection.
- ▷ Auxiliary amplifier, in case a passive loud-speaker is connected to the audio out plug (ref. FIGURE 1 #5).

5. **Save** the new configuration.

21 Setting Zones

A Zone is a group of DEVA sharing the same configuration. Working with Zones is easy as working with single DEVA and allows to configure multiple devices at the same time.

Once a DEVA is assigned to a Zone, time scheduled actions and event triggers have to be managed by means of the Zone panel on the DEVA System Manager.

1. Access the Zone panel by clicking on the **Zone tab** in the main bar of the DSM (ref. FIGURE 20).

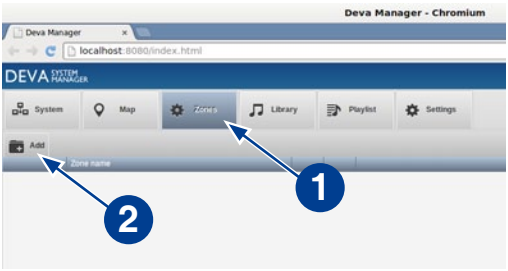


FIGURE 20: Zone management.

2. Add a new Zone by clicking on the **Add** button in the toolbar. Two panels appear (ref. FIGURE 21):

- ▷ the left hand panel lists all available DEVA, i.e. the ones that don't belong to a Zone;
- ▷ the right hand panel lists the DEVA assigned to the present Zone.

FIGURE 21: Assign DEVA to the Zone.

3. Give a significative name to the Zone and drag selected DEVA from the left hand panel to the right hand panel.

4. **Save** the configuration of the Zone.

22 Audio library and playlists

In order to set one or more playlists, you have to fill the Audio library of the DSM.

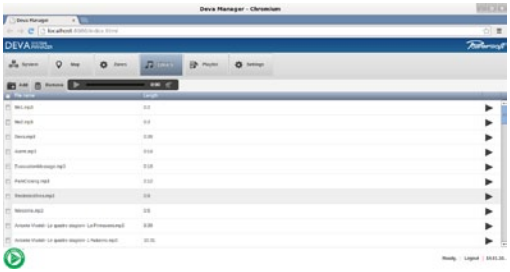


FIGURE 22: Audio library.

22.1 Setting a playlist

A playlist is a list of selected audio files chosen among the ones into the Library of the DSM.

The playback of a playlist is one of the main Actions performed by DEVA: playlists are available for single DEVA and Zones in time scheduling, events and live executions.

1. Click the **Playlist tab** in the main bar: the main window will show you all available playlists (ref. FIGURE 23).

2. Click on the **Add** button; a new window appears:

   ▷ the left hand panel lists all available audio file from the Library;

   ▷ the right hand panel lists the audio file assigned to the present playlist.

3. Give a significative name to the playlist and drag audio files from the left hand panel to the right hand panel.

4. **Save** the playlist.

FIGURE 23: Playlist panel.

FIGURE 24: Drag sudio files into the playlist.

23 Predefined messages

Each DEVA can store up to ten predefined audio files outside the audio library.

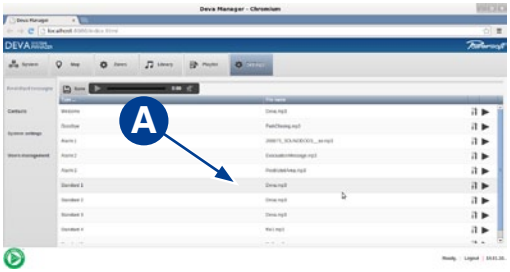


FIGURE 25: Predefined Messages.

These files are common to all the DEVA in the network and can be live played as instantaneous announces, as well as scheduled or triggered by selected events.

The predefined messages can be managed through the **Settings** panel in the DEVA System Manager (ref. FIGURE 25).

The panel displays ten raws identified by the labels:

- Welcome
- Goodbye
- Alarm 1
- Alarm 2
- Alarm 3
- Standard 1
- Standard 2
- Standard 3
- File 1
- File 2

Label can not be edited, but you can customize the audio files associated to the labels.

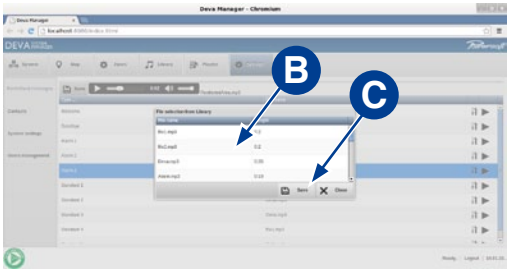


FIGURE 26: Edit predefined message.

A. Double click on a raw: a dialog window will open (ref. FIGURE 26).

B. Select an audio file from the audio library.

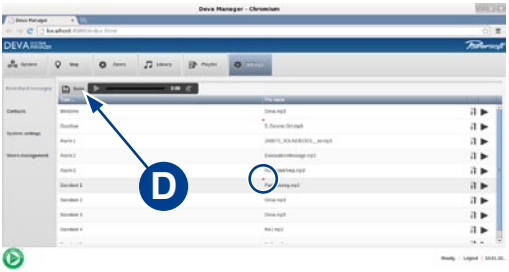


FIGURE 27: Edited messages not yet synchronized.

C. Click on the **Save** button.

D. Click on the **Save** button in the Settings panel in order to make the new configuration effective (ref. FIGURE 27).

The DSM highlight the changes in the predefined messages with a red triangle located top-right of the filename (ref. FIGURE 27).

All connected DEVA must be synchronized in order to share the new configuration.

E. Click on the **System tab**: a red check-mark on the Settings updated column warn you about the need to synchronize the connected DEVA.

F. Select all the DEVA and click on the **Sync** button.

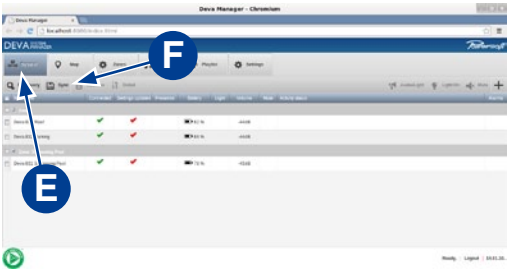


FIGURE 28: Synchronize connected DEVA.

24 Setting time schedule

You can schedule actions for single DEVA and Zones. The following actions can be scheduled:

- ▷ Play audio
  - ∘ play a predefined message
  - ∘ execute a playlist
  - ∘ playpack a single audio file
  - ∘ playback an FM radio
- ▷ Switch the light
- ▷ Record audio
- ▷ Take photo

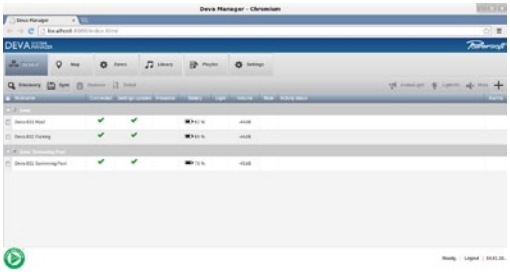


FIGURE 29: System panel.

In order to set a schedules for a single DEVA, double click a DEVA in the System panel (ref. FIGURE 29): the DEVA control panel window appears allowing you to manage the device.

If the DEVA belongs to a Zone, it inherits the Zone's schedules: it is not possible to configure a custom schedule for it (ref. FIGURE 30).

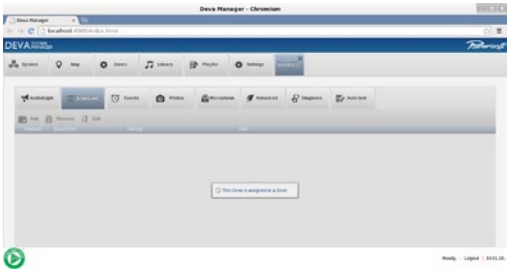


FIGURE 30: It is not possible to set a custom time schedule because the DEVA belongs to a Zone.

If you want to set a schedule for a Zone, click on the Zone tab in the main bar and start editing the zone (ref. FIGURE 31).

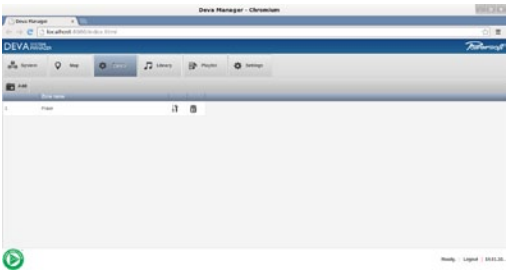


FIGURE 31: Edit a Zone.

Both in the DEVA control panel and in the Zone control panel click on the **Scheduling** button in order to set a time schedule.

In the Scheduling panel:

1. Insert a significative name for the schedule;
2. Enable or disable the present schedule: this feature allows you to configure a schedule and let it in stand-by or temporary disabled, even if properly scheduled.
3. Select a starting time and possibly its recurring execution.
4. Select the type of action you want to schedule: the input parameters change regarding to the type of selected action.

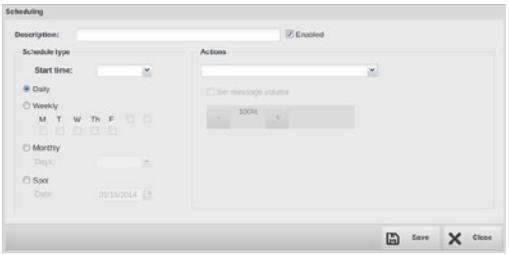


FIGURE 32: Schedule settings.

25 Setting Events

You can set triggering events for single DEVA and Zones. The following actions can be triggered:

- Play audio
  - play a default message
- Switch the light
- Record audio
- Take photo/video
- Notify with an sms

In order to set an event for a single DEVA, double click a DEVA in the System panel (ref. FIGURE 29): the DEVA control panel window appears allowing you to manage the device.

If the DEVA belongs to a Zone, it inherits the Zone's events: it is not possible to configure a custom events for it.

If you want to set an event for a Zone, click on the Zone tab in the main bar and start editing the zone (ref. FIGURE 31).

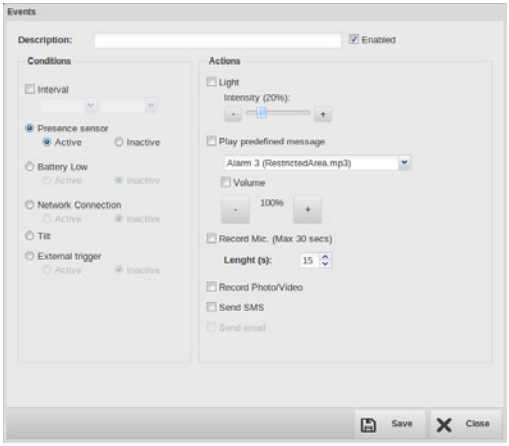


FIGURE 33: Event settings.

1. Insert a significative name for the event;
2. Enable or disable the present event: this feature allows you to configure an event and let it in stand-by or temporary disabled.
3. Select a time interval during which an event may trigger an action (optional).
4. Select one or more action triggers among:
   - Presence sensor
   - Battery charge
   - Network connectivity
   - Mechanical shocks
5. Select the actions you want to trigger.

26 Live execution

Through the System panel of the DSM you can execute main actions on selected DEVA:

- Switch the light
- Mute the playback
- Play audio
  - stream an announcement/audio file
  - play a predefined message
  - execute a playlist
  - play an FM radio
- Set the master volume

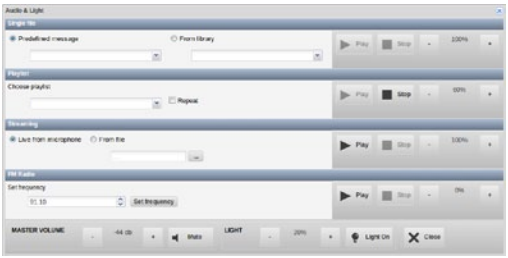


FIGURE 34: Audio&Light panel.

The Audio&Light panel (ref. FIGURE 34) allows you live stream an announcement as well as playback audio from the library, FM radios or predefined messages.

The playback volume of any scheduled, triggered or live executed audio is a percentage of the master volume configured in the Audio&Light panel.

27 Advanced network settings

You can manage your network directly from the PDD or through any external client (e.g. a laptop or an iPad) connected to the network of DEVA since the PDD implements a web server providing remote access to the DEVA System Manager.

In order to remotely manage the DEVA you need to connect the client to the PDD: as well as you connect to a website on internet through a web client, you need to know the PDD IP address. The IP address of the PDD can be discovered by means of the Network Manager installed on the operating system.

27.1 Setting PDD network parameters

At the end of the initialization procedure the DEVA System Manager has discovered the DEVA within the network.

By means of the Dynamic Host Configuration Protocol – DHCP –, each DEVA and the PDD own a unique dynamic IP address: this configuration allows an easy network initialization, since minimizes configuration errors and IP address conflicts.

Static IP addressing can be restricted to a subset of devices: you can mix static and dynamic clients on the same network as long as you avoid using static IP addresses within the numeric range where the router/DHCP-server is likely to issue its addresses.

Refer to your router/DHCP server user manual for dynamic addressing configuration.

27.1.1 Setting PDD's static IP

In order to set a static IP address on your PDD you have to deal with the network manager provided by the GNU/Linux operating system.

1. Press on the network icon on the top panel and select Edit Connections... on the pop-up menu.

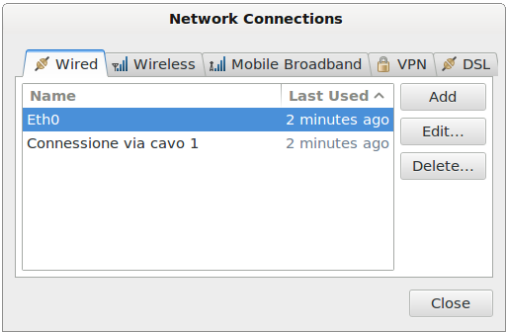


FIGURE 35: Edit Eth0 properties.

2. The Network Connections windows opens: into the Wired tab select Eth0 and press on the Edit button (ref. FIGURE 35).

3. A new dialog window will appear where you can set the main parameters of the wired connection: select the IPv4 tab in order to set a static IP address for the PDD wired connection.

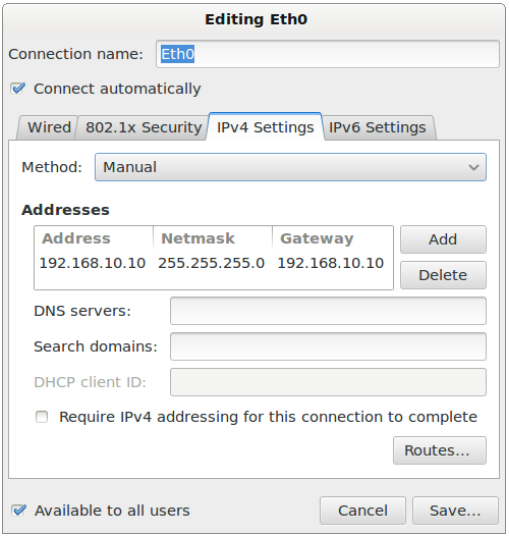


FIGURE 36: Select IPv4 manual configuration and set static IP address.

4. Select Manual on the addressing Method dropdown menu.

5. Manually insert:

   ▷ IP address: within the router/DHCP-server IP subnet (e.g. 192.168.10.10)
   ▷ Netmask (e.g. 255.255.255.0)
   ▷ Gateway: same as the IP address (e.g. 192.168.10.10)

Be aware to select a static IP address within the router/DHCP-server IP subnet, otherwise you could loose the link with the DEVA connected to the PDD network.

27.2 Setting DEVA network parameters

1. Click on the **Settings tab** in the main bar. The main window switch to the Settings panel

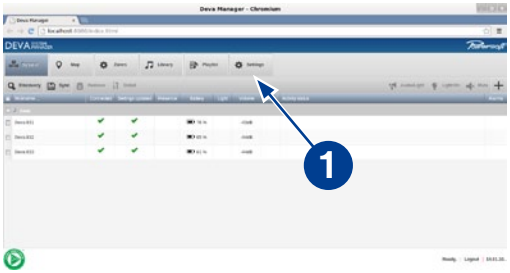


FIGURE 37: System panel.

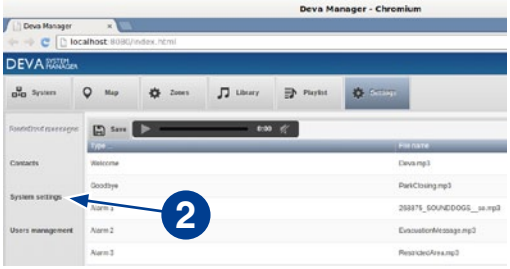


FIGURE 38: Click on System settings.

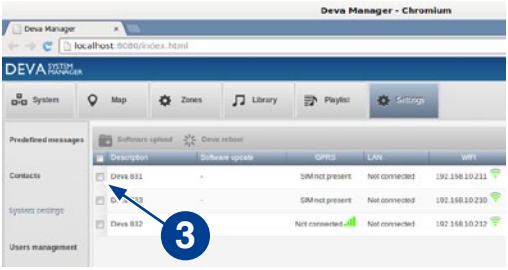


FIGURE 39: Select one DEVA.

2. On the left column, click on **System settings**

3. Select the DEVA you want to edit. A new panel appear providing you information on the device

4. Click on the **Network** button. Now you can view the network parameters of the DEVA as well as the Wi-Fi and GPRS configuration.

5. Click on the **Edit** button to enter the edit mode.

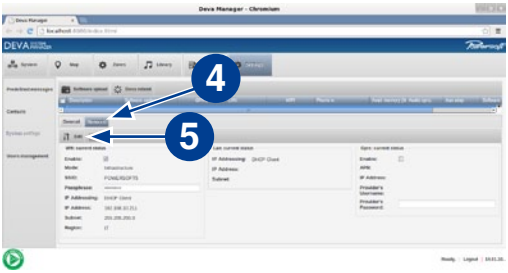


FIGURE 40: Edit network settings.

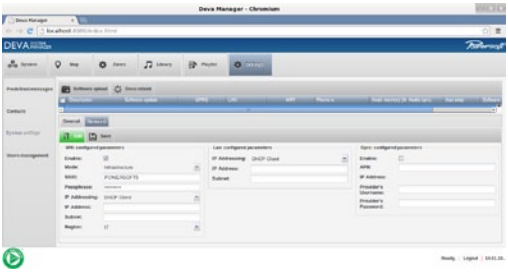


FIGURE 41: Network and GPRS parameters.

27.3 Configuring a WiFi mesh network

You can configure the DEVA to establish a WiFi mesh network. One of the DEVA in the mesh acts as gateway, i.e. it routes data between networks, and is networked to the same subnet to which the PDD belongs; all other DEVA in the mesh are WiFi nodes.

27.3.1 Setting DEVA as Gateway

The DEVA gateway establish the WiFi mesh network and allows the PDD to connect to the mesh. The DEVA gateway shall be connected to the wired LAN to which the PDD belongs.

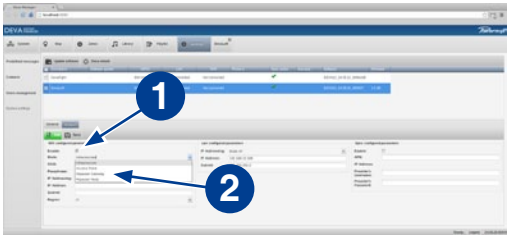


FIGURE 42: Setting DEVA as Repeater Gateway.

In order for the nodes to recognize the mesh, the WiFi network SSID must be set.

1. In the **WiFi: configured parameters** panel, click on the **Enable** check-box in order to allows editing.

2. Click on the **Mode** dropdown list and select **Repeater Gateway**.

3. Set the SSID of the WiFi mesh network.

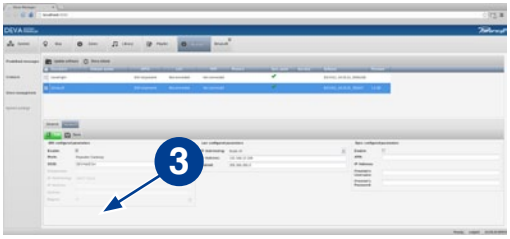
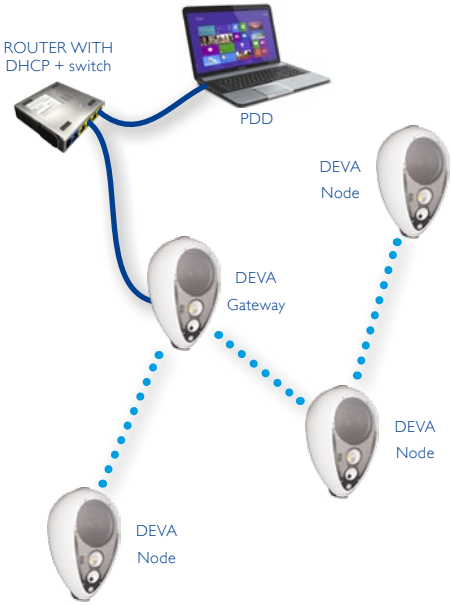


FIGURE 43: Setting the SSID.



27.3.2 Setting DEVA as Node

A. In the **WiFi: configured parameters** panel, click on the **Enable** check-box in order to allows editing.

B. Click on the **Mode** dropdown list and select **Repeater Node**.

C. Insert the SSID of the WiFi mesh network.

D. Set how to manage the IP addressing (DHCP or static).

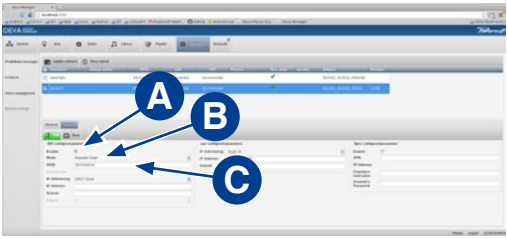


FIGURE 44: Setting DEVA as Repeater Node.

27.4 Revert to DEVA default network settings

The Hard-reset (ref. Chapter "29.2 Hard-reset") of the DEVA allows to restore the default network settings. The position of the Wi-Fi default setting selector located on the DEVA dashboard (ref. FIGURE 45) defines the network configuration the DEVA will revert to.

27.4.1 Wi-Fi intrastructure mode

In a wireless network environment, DEVA is set by default to connect to a Wi-Fi network as a client, i.e. in infrastructure mode. An external access point (AP) is required for infrastructure mode wireless networking. Infrastructure mode networks offer the advantage of scalability and centralized security management.

To join the Wi-Fi network, the AP and all wireless clients must be configured to use the same SSID: DEVA SSID is set by default to `POWERSOFT` (ref. Chapter "17.1 DEVA in a wireless LAN").

- Wireless Infrastructure mode default settings:
  SSID: `POWERSOFT`
  Default AP password: powersoft
  IP addressing: DHCP

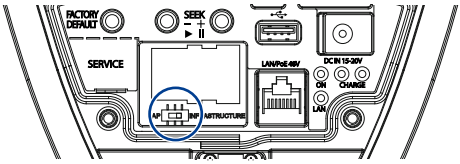


FIGURE 45: Wi-Fi mode selector.

27.4.2 Wi-Fi access point mode

By means of the Wi-Fi default setting selector located on the DEVA dashboard (ref. FIGURE 45) it is possible to switch the default Wi-Fi network mode to Access Point mode.

DEVA is capable to behave as an AP and host up to 5 clients such as the PDD or other DEVA. By default the DEVA AP SSID is composed by the word `deva-ap` and the hex MAC address of the DEVA, e.g. `deva-ap-008421001C6A`.

Wireless Access Point mode is available only when wireless infrastructure mode is disabled.

DEVA Wi-Fi is IEEE 802.11n compliant and can operates in both the 2.4 GHz and 5 GHz bands.

- Wireless Access Point mode default setting:
  SSID: `deva-<devaMAC>`*
  Default AP password: powersoft
  IP addressing: static 192.168.0.1
  DHCP: active

* `<devaMAC>` is the hexadecimal MAC address of the device.

A label with the DEVA's MAC address is attached on the internal side of the battery compartment cover.

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Reset and reboot

Very seldom you may need to restart the DEVA. Most of the problems related to schedules and event management can be solved through the DEVA System Manager.

DEVA provides reboot and reset procedures: the reboot procedure is meant to be useful during firmware update and can be launched from the DEVA System Manager; the reset must be activated on the DEVA on site.

28 DEVA reboot

1. Access the DEVA System Manager and click on the **Settings** tab (ref. FIGURE 46).

2. Click on **System settings**.

3. Select the DEVA you want to reboot and click on the **DEVA reboot** button (ref. FIGURE 47).

The DEVA reboots its internal operating system. All settings (e.g. name, IP, etc.), schedules (e.g. playlists), events and data (e.g. audio files) are kept and restored after rebooting.

On the System view you will see that the DEVA loses the connection with the PDD while booting and hooks again at the end of the process.

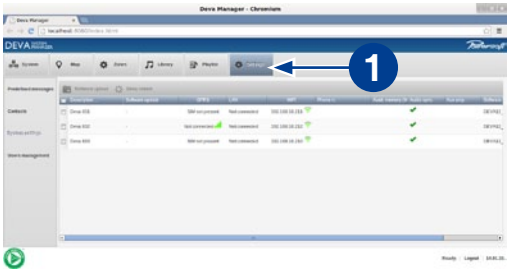


FIGURE 46: Click on the Settings tab.

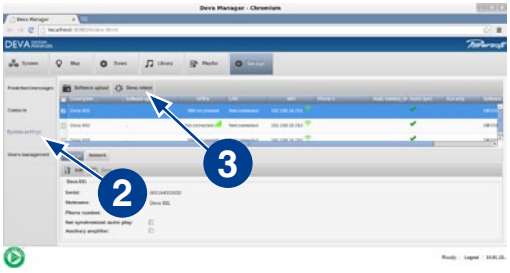


FIGURE 47: Reboot selected DEVA.

29 DEVA reset

DEVA implements two reset procedures: soft- and hard-reset. The soft-reset restores the device to the factory network preset; the hard-reset brings the DEVA to its factory settings by restoring the factory firmware and the factory network preset.

Both reset procedures preserve the data stored into the DEVA. At the end of the reset procedure the DEVA loses the connection with the PDD and shall be initialized (refer to Chapter "18 Initialization").

29.1 Soft-reset

1. Access the DEVA on site.

2. Set the Wi-Fi default setting selector located on the DEVA dashboard to Infrastructure (default) or Access Point mode (ref. FIGURE 48 A).

3. Press the **Factory Default Setting** push-button and keep pressed the button until the DEVA plays two beep.

4. Release the Factory Default Setting push-button and wait until all the reboot procedure is over.

During the bootstrap procedure you can hear a weak high frequency tone coming from the DEVA: the presence of this weak signal means that the operating system is booting.

The soft-reset procedure will end when the overall systems are ready and lasts approximately in one minute. At the end of the soft-reset the DEVA's network settings are factory default: In order to access the DEVA you have to follow the initialization procedure as described in Chapter "18 Initialization".

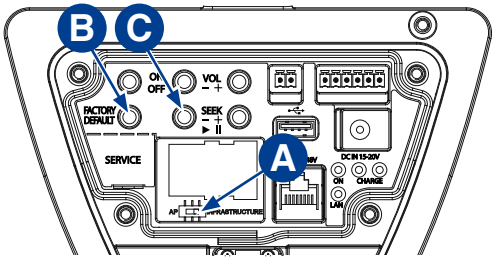


FIGURE 48: DEVA dashboard.

29.2 Hard-reset

1. Access the DEVA on site.
2. Set the Wi-Fi default setting selector located on the DEVA dashboard to Infrastructure (default) or Access Point mode (ref. FIGURE 48 A).
3. At the same time press the **Factory Default Setting** (ref. FIGURE 48 B) push-button and the **Seek–** (ref. FIGURE 48 C) push-button: keep pressed both the button until the DEVA plays two beep, the second longer than the first.
4. Release the push-buttons and wait until all the reboot procedure is over.

During the bootstrap procedure you can hear a weak high frequency tone coming from the DEVA: the presence of this weak signal means that the operating system is booting.

The hard-reset procedure will end when the overall systems are ready and lasts approximately in one minute. At the end of the hard-reset the DEVA's network settings and firmware are factory default: in order to access the DEVA you have to follow the initialization procedure as described in Chapter "18 Initialization".

	Soft RESET	Hard RESET
Restore FIRMWARE		✓
Restore NETWORK SETTINGS	✓	✓

TABLE 2: Reset comparison.

Software update

The DEVA System Manager allows you to remotely update the firmware and the software on board of multiple DEVA at a time.

The software updating procedure encompass two main steps:

- DEVA software update.
- DEVA System Manager update.

30 DEVA software update procedure

1. Access the DEVA System Manager and click on the **Settings** tab.

2. On the left menu click on **System settings**.

3. Select the DEVA you want to update and click on the **Software upload** button (ref. FIGURE 50).

4. A new dialog window appear: click on the "+" button and select a file with the **.deva** extension.

5. Confirm the selection by clicking on the **Upload** button. Wait until the end of the update process (it can take some minutes).

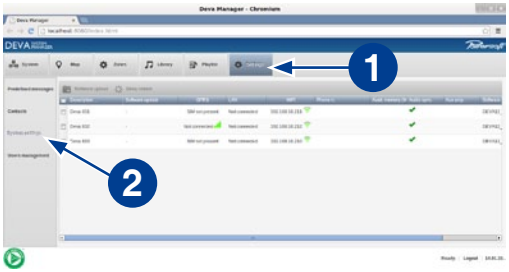


FIGURE 49: Click on the Settings tab.

6. At the end of the updating procedure, the Setting panel of the DEVA system Manager will show the status as "Completed" on the Software update column and the software version on the "Software" column (ref. FIGURE 52).

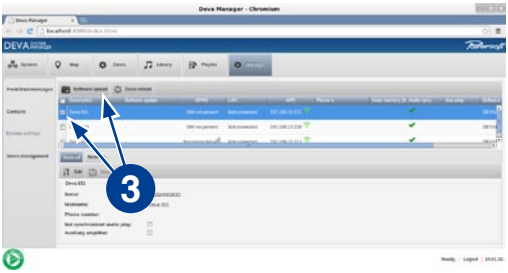


FIGURE 50: Select one or more DEVA and click on the Software update button.

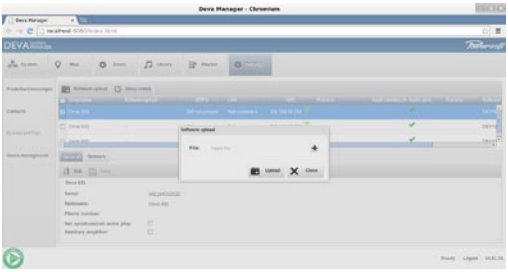


FIGURE 51: Enter a .deva file.

FIGURE 52: Software updated.

31 Update the DEVA System Manager

The DEVA System Manager update package is distributed as a **.deb** file. The update procedure in performed on the PDD: you need to know the PDD system administrator password in order to complete the process.

1. Double click on the .deb package (e.g. devabiz_13.12.20_i386.deb)

2. Click on "update" and enter the PDD system administrator password (which is "*powersoft*" if you didn't specify a different one).

3. Wait for the process to be finished

4. Reboot the PDD.

Accessories

32 Mounting kits

DEVA is meant to be self sufficient: after the initialization and configuration procedures, DEVA can be installed on site and remotely managed.

DEVA is provided by a bracket suiting a set of optional pole and wall mounting kits.

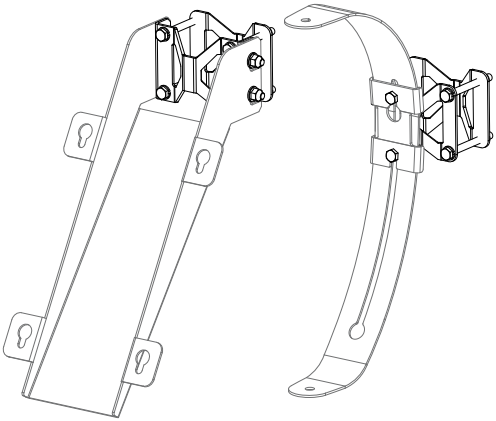
32.1 Needed tools

- 13 mm metric wrench
- 3 mm hexagonal key (Allen key)
- 6 mm hexagonal key (Allen key)

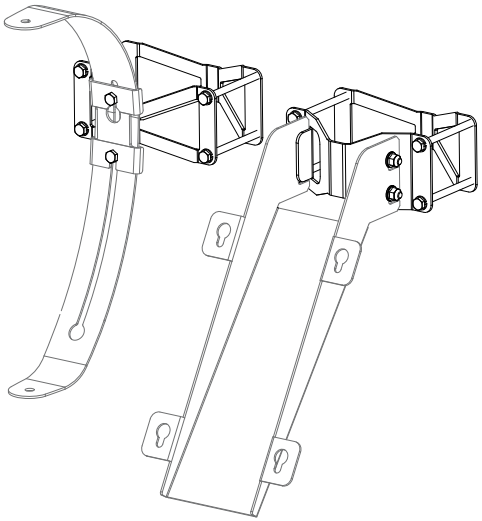
32.2 Pole and wall mounting kits

The DEVA and the solar panel can be hanged on poles, trees and walls by means of the optional mounting kits; three types of mounting kits are provided:

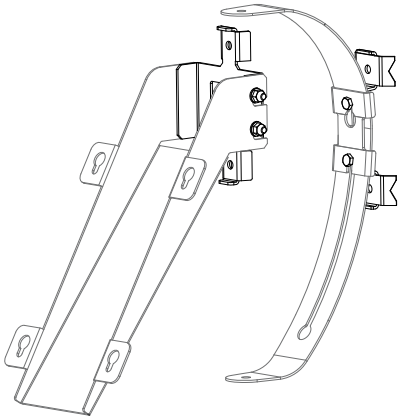
- DEVA and solar panel pole mounting kits for 40-85 mm pole diameter (1 1/2" - 3 1/3" diameter).



- DEVA and solar panel pole mounting kits for 85-150 mm pole diameter (3 1/3" - 6" in diameter).

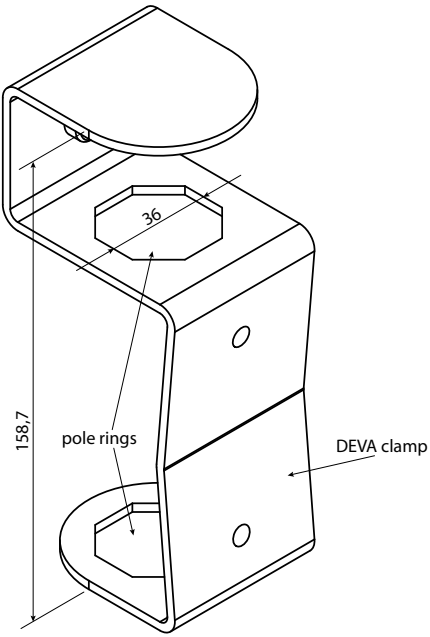


- DEVA and solar panel brackets for pole mounting with bands and buckles.



32.3 Tripod mounting clamp

Powersoft provides an optional clamp suitable to Ø 36 mm (1.42 inch) tripod or pole stands.



33 Solar panel

Powersoft provides two optional 35 W or 50 W, 18 V external solar panels: the best choice for making DEVA really self sufficient.

33.1 Plugging the solar panel

1. On the rear of the solar panel disc, open the connectors box and identify the positive and negative terminals:

   ▷ by looking inside the plastic case of the box, you will find the signs indicating the positive and negative terminals;

   or

   ▷ with the box cover opened and lying on the right side of the connectors box (ref. FIGURE 53), the positive plug is the left hand one, the negative plug is the right hand one.

   The central plug inside the solar panel's connectors box is not connected.

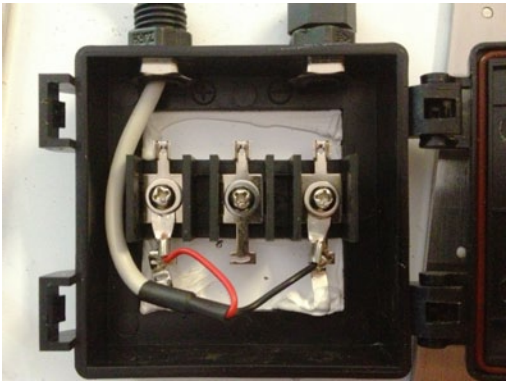


FIGURE 53: Solar panel's connectors box.

2. Unscrew the plastic fastening ring of one conduit of the box.

3. Insert the bipolar AWG24 wire with the fork terminals inside the fastening ring and then through the conduit.

4. Slightly loose the terminals' screws.

5. Connect the wire's forks to the plugs taking care to match the polarity and screw the terminals.

6. Fasten the bipolar wire: tightly screw the plastic ring on the conduit. Take care to leave slightly loose the wire inside the box.

7. Close the box.

8. Fasten the solar panel to its clamp. Take care to leave the wire slightly loose (ref. FIGURE 54).

9. The opposite side of the bipolar AWG24 wire is terminated with a Phoenix plug: insert the plug into the Phoenix MC 1,5/ 2-ST-3,81 DEVA's connector taking care to match the polarity: looking at the connector, the positive terminal is the left hand one (ref. FIGURE 55).

10. Fasten the wire to the DEVA and secure the dashboard compartement.

FIGURE 54: Leave the solar panel's wire slightly loose.

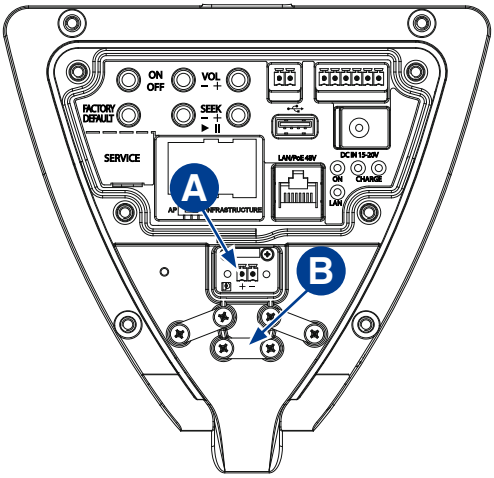


FIGURE 55: DEVA dashboard: A) Solar panel Phoenix connector; B) wire fastener.

34 DEVA passive

DEVA implements a two channels high efficiency audio power amplifier whose channel 1 is plugged to the built-in loudspeaker. The audio power out of channel 2 (ref. FIGURE 56) can be activated through the DEVA System Manager in order to drive the external custom DEVA loudspeaker version.

The DEVA passive provides a 2 Ω nominal impedance loudspeaker on a DEVA shaped cabinet.

The DEVA passive can not play idependently because it does not implement the audio power amplifier and the core system for remote management.

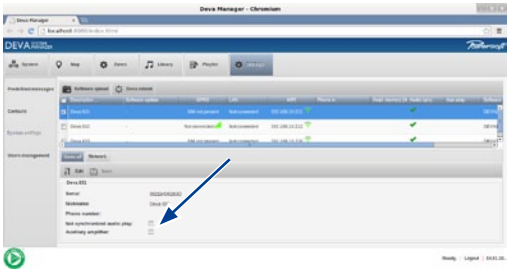


FIGURE 56: Activate the auxiliary amplifier on the system settings page.

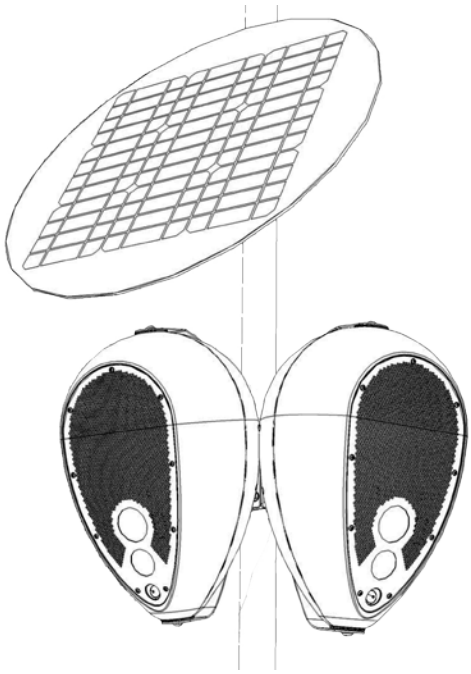


FIGURE 57: The DEVA passive loudspeaker is driven by the auxiliary amplifier of the DEVA.

PDD and DSM

A Powersoft DEVA Director – PDD

The Powersoft DEVA Director – PDD – is a personal computer implementing a custom GNU/Linux based operating system: the PDD provides a client-server environment that allows the user to easily manage the network of DEVA.

Both the DEVA and the PDD must be connected to the same network; this means that all devices have to be either hosted by the same Wi-Fi access point or wired and sharing the same subnet and IP range.

The web server built in the PDD provides access to the DEVA System Manager both via the PDD itself and any external web client.

Once configured, DEVA is meant to work stand alone, even if the connection with the PDD falls. In systems with more than one DEVA the PDD is essential to synchronize the audio playback.

A.1 Minimum system requirements for PDD

PDD can be installed on a personal computer with the following minimum characteristics:

- Intel i3 processor;
- 4 GB RAM;
- 100 GB hard drive.

The pc would be formatted and inizialized with the PDD OS.

Powersoft provides an optional pre-configured PDD laptop ready to work.

B DEVA System Manager – DSM

DEVA System Manager is the web application running on the PDD that provides control, monitoring and configuration of the network of DEVA.

DEVA System Manager is scalable: it lets you control a single Powersoft DEVA or configure a very large network of multiple devices.

DEVA System Manager is a client that can be accessed directly from the web browser on the PDD and any registered client (e.g. a laptop or an iPad) on the same network of the PDD.

Regulations and warnings

C Warnings about using batteries

Use only batteries, chargers, and other accessories approved by Powersoft for use with this device. Please realize that batteries might cause damages like leaking, fire or explode when misuse or defective. Never make wrong polarity connection when charging and discharging battery packs. Always double check polarity of battery's connector to make sure red wire to red wire and black wire to black wire.

For safety reason, we usually ship battery not fully charged: you must charge the battery before use.

D Warnings about Wi-Fi

This device contains WiFi Module
FCC ID: TFB-TIWI501
IC ID: 5969A-TIWI501

FCC statement

This equipment contains a WiFi module that 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 by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and 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.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

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

1. This device may not cause harmful interference, and
2. this device must accept any interference received, including interference that may cause undesired operation.

This equipment is restricted to indoor use when operated in the 5.15 to 5.25 GHz frequency range. The end-user is responsible to select a specific transmission channel in order to satisfy outdoor wireless regulation requirements.

This device contains a device that is compliant with SAR for general population/uncontrolled exposure limits in ANSI/IEEE C95.1-1999 and had been tested in accordance with the measurement methods and procedures specified in OET Bulletin 65 Supplement C. This equipment should be installed and operated with minimum distance 20 cm between the radiator and your body.

IC statement

This equipment contains a device that complies with RSS-210 of the Industry Canada Rules. Operation is subject to the following two conditions:

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

IC Radiation Exposure Statement

This equipment contains a device that complies with IC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20 cm between the radiator & your body.

Note: the manufacturer is not responsible for any radio or tv interference caused by unauthorized modifications to this equipment. Such modifications could void the user's authority to operate the equipment.

EU declaration

Powersoft hereby declares that the WiFi module contained in this/these product(s) is/are in compliance with the essential requirements and other relevant provisions of Directive 2006/95/EC,1999/5/EC. This device is a 2.4 and 5 GHz wideband transmission system (transceiver), intended for use in all EU member states and EFTA countries, except in France and Italy where restrictive use applies.

In Italy the end-user should apply for a license at the national spectrum authorities in order to obtain authorization to use the device for setting up outdoor radio links and/or for supplying public access to telecommunications and/or network services.

This device may not be used for setting up outdoor radio links in France and in some areas the RF output power may be limited to 10 mW EIRP in the frequency range of 2454 – 2483.5 MHz. For detailed information the enduser should contact the national spectrum authority in France.

This equipment contains a device that is a Class B product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

Explosive device proximity warning – Do not operate a portable transmitter (such as a wireless network device) near unshielded blasting caps or in an explosive environment unless the device has been modified to be qualified for such use.

This device can be operated in the EU without restrictions indoor. The end-user is responsible to select a specific transmission channel in order to satisfy outdoor wireless regulation requirements.

This CE marking is valid for EU non-harmonized telecommunications products CE ① R&TTE Directive (1999/5/EC) issued by the Commission of the European Community.

European representative:
Powersoft S.p.A.
via E. Conti, 5
50018 Scandicci (FI), Italy

Specifications

Audio	
Sources	Streaming from remote microphone Playback from internal SD card Playback from USB key FM receiver
Interface module	1 x 8" wide-range loudspeaker
Frequency response	100 Hz - 16 kHz ±3dB
Max sound pressure level	115 dB SPL @ 1 m
Amplifier	Highly efficient Powersoft Class D circuitry
Memory	4 GB Solid state
Upstream	Via integrated microphone

Power Management	
Power supply options	35 - 50 W / 18 V External solar panel PoE, PoE+, via RJ45 port 18V 10W External power supply
Internal battery	Standard sealed battery 12Ah 12V
Min. light for solar charging	50 W/m2 , AM1.5
Max sound pressure level	115 dB SPL @ 1 m
Operating times (without recharging)	Stand-by: more than 14 days. Audio: approx. 64 hours. Light approx. 20 hours

Construction	
Casing	Lightweigth weather-resistant IP65, plastic case from -20° to +70 °C (-4° / +158° F)
Dimensions	L x W x H 300 x 220 x 440 mm 11.81 x 8.66 x 17.32 in
Weight	10 kg / 22 lb

Lighting	
Spot light	High-power 4000°K white LED, appr. 540 lm, appr. 35° coverage, dimmable

Photo & Video	
Camera resolution	752 x 576 pixels
Camera aperture	60°
Video resolution	320 x 240 pixels 1 fps

Communication	
Wireless	Standard IEEE 802.11 a,b,g,n,d, 2.4 and 5 GHz
WiFi security	64-bit WEP 256-bit WPA, 256-bit WPA2 PSK
Wired	Ethernet 100 Mbit/s, PoE, via internal RJ45 port. USB 2.0, via internal port
Long range connection	GSM/GPRS module

Sensors	
Presence alarm	Infrared presence detector
Telemetry	Infrared presence detector

Auxiliary Interfaces	
Input / Output	1 x auxiliary power audio output 1 x RS485 1 x general purpose digital input

Graphic User Interface	
Web Browser	Web Browser On-board web server for mobile clients via Wi-Fi connection

Data are subject to change without notice. For latest update please refer to the online version available on www.powersoft-audio.com.

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