

# **DEVA SYSTEM MANAGER**

# **USER GUIDE**



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## Introduction

Deva is a multifunctional and compact device that implements two-way wireless communication, audio message playback and video capture.

Once configured, Deva operates as a self-sufficient device equipped with sensors such as microphone, presence detector, temperature and atmospheric pressure probe, and accessories such as LED spotlight, camera, etc., which make it capable of interacting with the environment through the integrated speaker and its audio playback and video capture functions.

Deva allows the exchange of messages and environmental control. Communication can take place either via Wi-Fi or via Ethernet LAN cable (also powered by POE) using PCs, tablets and smartphones. Remote control is also possible via GSM\GPRS\UMTS\LTE.

Deva has been designed to be independent of existing infrastructure, without the need for cabling and with very low installation costs. Deva uses "green" technologies: its highly efficient electronics limit current consumption, thus allowing the continuous use of energy supplied by a rechargeable battery. A normal trading solar panel can quickly charge the battery, even in low sunlight conditions.

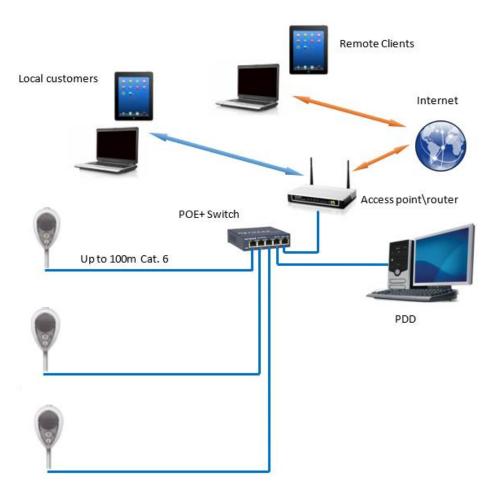
DEVA's shell is resistant to water and dust (IP65), making it an ideal solution for outdoor installations, for applications ranging from scheduled diffusion of background music, to video surveillance.

Deva is a self-sufficient and fully configurable network drive that can be installed anywhere.

### System architecture

A Deva system consists of the devices, the communication infrastructure, LAN, Wi-Fi, or mobile network, and a management server called PDD (Powersoft Deva Director). DSM (Deva System Manager) management software runs on this server. The DSM provides a web-type user interface that is accessible from any PC on the same subnet or that is able to connect to the PDD via the Internet if it has a static public address.

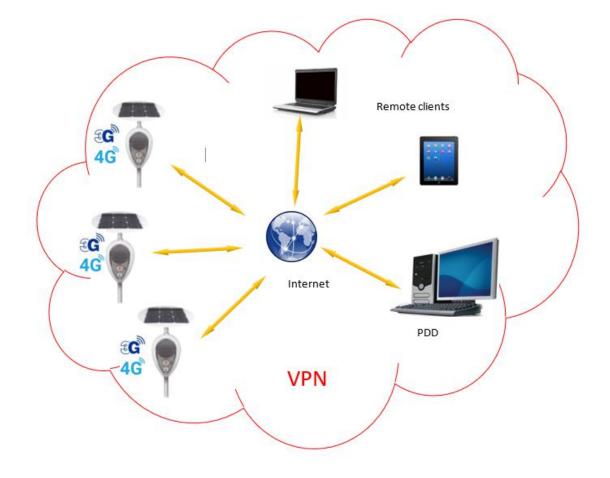
Below is a typical installation structure in the case of POE wiring:



Below is a typical installation structure in the case of a Wi-Fi network:



Below is a typical installation structure in the case of a Mobile network:



### Accessing the web interface

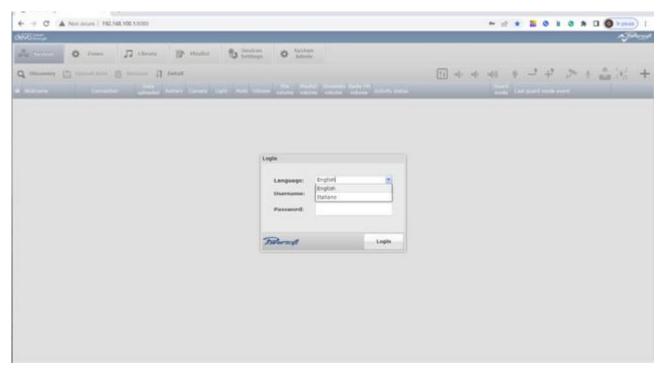
It is assumed that the Devas and the PDD have a static IP address set, of the 192.168.100.x type, therefore it is assumed that the PDD has 192.168.100.1. and the Devas, for example, have 192.168.100.10, 192.168.100.11 etc.

In the case of VPN, the address set is typically 10.11.12.x.

Open a browser (Chrome is recommended) on any PC that can reach the PDD, then enter the address:

#### http://192.168.1.1:8080

The following page will appear:



Select the language and enter Username and Password. The default values are:

Username: admin Password: admin

The system page is then accessed.

### The System page

Below is the system page:



The page consists of: a window menu (indicated by the red rectangle), a hot key bar (indicated by the yellow rectangle), a system grid (indicated by the green rectangle) and a status bar (indicated by the blue rectangle) that shows the status of the "Ready" system, a "Logout" button to log out and the DSM version. Focusing on the "System" page. Below is an explanation of the purpose of the hotkeys.

### Hotkeys

Here is the description of the hotkeys:

Q Discovery It is used to run a search in the network and detect all the Devas present

It is used to load the configurations performed on the PDD, then locally, on the Devas involved. During the upload in the "Updated data" column of the grid, an animated wheel will appear in correspondence of the selected Devas. The green horizontal line indicates that the data is up to date, the red horizontal line indicates that it is not. The exclamation point indicates a problem in communication, as will be explained in the paragraph on the grid

**Remove** Used to remove a Deva from the system. It is activated only by selecting Deva offline (see below). It is not possible to remove a communicating Deva. It must first be disconnected so that it goes offline.

Allows you to access the sub-windows related to operations that concern the video part, the schedules, the events, and the diagnostics on the individual Deva. We will examine this in more detail later.

U Opens the Player management window. See the relevant paragraph below.

Enables\disables the mute for the selected Devas

- Lowers the volume for the selected Devas
- Turns up the volume for the selected Devas

😢 Turns the LED of the selected Devas on and off

Lowers the led intensity of the selected Devas

+ Raises the led intensity of the selected Devas

Turns the video camera on and off (for Deva HD)

Enables AUX Input Amplification

Activates the Guard mode, that is, all events set to the selected Devas that have the relative check-box marked in the relative window.

Activates a mode in which the LED spotlight goes in time with the music, creating a psychedelic effect.

Adds four columns to the grid containing information about the memory used, battery voltage, PoE voltage, and current delivered by the solar panel.

Hides the four columns added with the button above

### The Grid

The grid is a table that shows on the rows all the checked Devas and on the columns the various statuses and levels of the quantities set on the various Devas. The Devas are displayed according to the zone grouping set. With keys  $\blacksquare$   $\blacksquare$  the Devas of an area can be shown or hidden to simplify the table. The check-box in the first column allows to select one or more Devas to send the commands. The check-box next to the name of an area acts on all the Devas of the same area. The columns are described below:

The columns are described below:

Nickname: nickname assigned to the Deva Connection: the type of active connection indicated by the icons

LAN
 Wi-Fi (the green arcs indicate signal level)
 Mobile (green bars indicate signal level)
 VPN
 absent

**Data uploaded**: indicates the alignment status between the files on the PDD and those on the Deva. The statuses are:

- 💙 aligned
- \star non-aligned
- O alignment in progress
- 😍 alignment failed

Battery: status and charge level of the battery. The statuses are:

- in charge
- charged
- Iow charge,
- fully discharged

Camera: the presence of the icon 🎽 indicates that the camera is on

LED: percentage of the LED light intensity. The icon indicates that the LED is on
 Mute: the presence of the icon ✓ indicates the mute status of the Deva
 Volume: amplifier output level value in dB. The maximum level is 0dB
 File volume: percentage of the channel volume level that plays audio files on board Deva

Playlist volume: percentage value of the volume level of the channel that plays the playlists

Streaming volume: percentage value of the channel volume level that plays streaming audio files

Radio FM volume: percentage value of the volume level of the channel playing FM radio

Activity Status: column showing the work in progress on the Deva

**Guard mode**: the presence of the icon indicates that the Deva is in guard mode (see the paragraph on event management)

Last Guard Mode Event: displays the last recorded event

If the user clicks on button + the following columns appear:

Memory Used: ppercentage of mass memories used

VBATT: battery voltage in Volts

VPoe: voltage generated by the solar panel in Volts

**IPanel**: current supplied by the solar panel in Ampere

### The Players window

To access the Players window, it is necessary to select one or more Devas from the grid and click on button of the hotkey bar. The window is shown here below:

Players						
Single file			_	_	_	
Predefined message	C From library	~	► ■	-	100%	<b>4</b> ))
Playlist						
Choose playlist	✓ ■ Repeat			-	100%	<b>4</b> ))
Streaming		_	-			_
From file	© Web Radio	×	▶ ■	•	100%	<b>()</b>
FM Radio						
Choose frequency 86.50	<b>Set</b> (96.80 MHz)			-	100%	<b>4</b> ))

The window is divided into four panes, one for each playback channel (also called pipeline). The four pipelines could be mixed together, this is why it is possible to define the percentage of individual volumes with buttons and .

The first pane is called **Playlist** and it is used to play a file that is stored in the selected Devas. The user can choose one of the 10 messages, that can be both native or previously updated in the management part explained later or select a file from the DSM library. Clicking on the play button causes the file to be played by all the selected Devas, in sync. If a DSM library file has been chosen that has not yet been transferred on board one or more Devas, obviously from among those selected, playing will begin after the file is uploaded. Obviously, if the same song is relaunched, it will start right away. Button stops playing at any time.

The second pane is called **Playlist** and allows the user to play a previously compiled Playlist, as explained later. If the **Replay** option is selected, the Playlist plays in loop. As for the volume, the above applies.

The third pane is called **Streaming** and allows the user to play an audio file without transferring it on board the selected Devas, but by streaming it in real time. This means that if the connection between PDD and a Deva is lost, it will stop playing. Once again, playing takes place in sync in this pane. A second possibility is to select a Web Radio from a previously set list, which will be explained later, which can be listened to by all the selected Devas. A third possibility is displayed <u>only on the web interface of the PDD</u> itself, as it allows to stream to the selected Devas a message told using a microphone connected to the audio input of the PDD in Live mode.

Streaming		_					_
From file	O Web Radio		Live from mic		-th	100%	-(1)
			7	Sec. 1			

Actually, it is necessary to take into account that in the streaming process a latency of about 300-500ms is introduced; therefore, this mode cannot be used to amplify a conference or live music.

The fourth and last pane is called **FM Radio** and allows to play a radio station whose frequency can be set with the arrows or by typing the frequency into the textbox and pressing the set button. There is also the possibility to select a station previously included in a list of favourite radios. How to create this list will be shown later.

At the bottom of the window the buttons to set the **volume** and **mute** of the amplifier can be found, exactly what can be done from the same buttons on the hotkey bar.

## **Device Settings**

This window allows the configuration of all operating parameters and the performance of some important functions such as software update. Below is the window:

### **Device Settings Grid**

The form allows the user to select only one Deva and to display the pane at the bottom where the general parameters, network, Voice over IP service, and its license can be set. Below the meaning of the columns is explained.

**Description**: nickname assigned to the Deva

Software Update: status of the Deva software update procedure. The following statuses may appear:

Upload: the .deva file is being transferred from the PDD to the Deva

Running: the .deva file is on board the Deva and the file update operation is taking place

Reboot: the software has been updated and the Deva is rebooting with the new version

Phone: status of the Mobile connection. The following indications may appear:

"No SIM": the operator's SIM is absent or not recognised

**...**: icon representing the signal level of the modem. Hovering over the icon with the mouse will show the signal level [1÷32].

**Data Connection**: this column shows the status of the mobile data connection. It is typically used in conjunction with VPN for security reasons. The following indications may appear:

Unavailable: Deva is currently unavailable, for example, it is off.

**Disconnected**: Deva is connected but does not use the data network.

**10.11.12.xxx:** is the IP address assigned to the Deva by the VPN server, which, typically, is the same PDD whose address will be 10.11.12.1.

LAN: this column shows the status of the LAN connection. The following indications may appear:

**Disconnected**: the Deva is disconnected from the LAN connection.

**www.xxx.yyy.zzz**: it is the IP address assigned to the Deva, either dynamically from a DHCP server, or statically, as explained later.

**WIFI**: this column shows the status of the WIFI network connection. The following indications may appear: **Disconnected**: the Deva is disconnected from the WI-FI connection.

**www.xxx.yyy.zzz**: it is the IP address assigned to the Deva, either dynamically from a DHCP server, or statically, as explained later.

#### Please note:

In the event that the Deva is set as an Access Point, its default IP address is 192.168.0.1 and it will assign to its clients, for up to 5 devices, an address of the type 192.168.0.x with x>1. However, if the Deva is also connected to a LAN with 192.168.xxx.yyy address, then an address will be set on the WI-FI network controller that does not interfere with the subnet to which the LAN network controller belongs. For example, if on the LAN one had 192.168.1.123 with NET MASK 255.255.255.0, then on WIFI the Deva would set 192.168.2.0. If the NET MASK was 255.255.248.0, which creates a subnet with all addresses from 192.168.0.x to 192.168.7.x, then the Deva would set 192.168.8.0, which is the first useful address outside the subnet on the LAN.

VPN: This column remains empty until a VPN network is established. In that case, it will report the VPN symbol **3** and the address assigned to the Deva, typically of the type 10.11.12.x.

**Phone no.**: this field shows the phone number of the SIM entered in the Deva. It serves only as a reminder, it does not have any operational use

Sip: This Column reports the status of the SIP service. In particular, these are the possible statuses:

Empty: not supported

E: missing licence

: active service

SIP server unreachable

**Bluetooth**: if the icon  $\checkmark$  is present in the column, then the Bluetooth interface is active.

**Gps**: if the icon  $\checkmark$  is present in the column, then the GPS receiver is active.

Aux Amp: if the icon  $\checkmark$  is present in the column, then the second amplifier for the AUX output is active. **RGB Led**: if the icon  $\checkmark$ , is present in the column, then the RGB LED that shows the power and WI-FI connection statuses is active. As explained on the installation guide of the Deva, this RGB LED located in the centre of the LED spotlight indicates the following statuses according to its colour and flashing:

evolution												Device	Settings HotKey I	Bar	
Dig System	🗘 Zones	🎵 Libri	ary 🗊	Playlist 👷	Devices Settings	System Admin				L	/		,		
) Deva reboot (	Deva poweroff	Upd	late software	हेंदू Check updat	e									Sol	tware Upda
Description	Software upda	Phone	connection	LAN	WIFI	VPN Phone	Slp	Bluetooth	Gps	Aux amp.	RGB led	Events Log	Software	updated	Firmware
Deva_00264161	÷	.al	Unavialitable	÷	8			4			4	4	DEVA13_22.04.19_095336_#6f6e8ac	4	1.4.6D
Deva_00358222		al.	Unavailable	2				1			~	~	DEVA13_22.04.19_095336_a6f6e8ac	4	1.4.30
CadolingiEsterno	*		Not connected	192.168.100.41	192.168.0.1		B					1	DEVA13_22.04.19_095336_a6/6e8ac		1.4.30
CadolingiProd2	•	al	Not connected	192.168.100.44	19	Device	Sot	tings Ec	orm		-	*	DEVA13_22.04.19_095336_a6f6e8ac	*	1.4.30
CadolingiProd		al	Not connected	192.168.100.43	19	Device	Jen		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		-	1	DEVA13_22.04.19_095336_a6f6e8ac	-	1.4.30
CadolingiMaga		ail	Unavailable								1	1	DEVA13_22.04.19_095336_a6f6eBac	4	1.4.30
ContilIndoor	2	all	Not connected	192.168.100.52	192.168.0.1		~	~			-	~	DEVA13_22.04.19_095336_a6f6e8ac		1.4.3D
ContilOutdoor	4	al	Not connected	192.168.100.51	192.168.0.1		E				1	4	DEVA13_22.04.19_095336_a6f6e8ac		1.4.3D
Museum	8	al	Not connected	192.168.100.24	192.168.0.1							Dev	a Settings	1	1.4.30
Conti13Hall		al.	Not connected	192.168.100.21	192.168.0.1		1						DEAMT2~55104-12-032320"B0/0609C		1.4.30
Contractorio		4	Web accounted	103.170.105.33	103.109.0.1								001813-33.04.10.00033C +085+8++		1.1.36
Edit Save Information Nickname: Cau Part number: PFC	LEESS INVIOLES		Pet secondo d	Genera C Gps C Auxi	al			Bluetooth	1 <b>8):</b> -11				Phone		

Green: battery charging thanks to external power supply.

Blue: no external power supply. The Deva is using the battery.

Red: low battery. After a while, the Deva will turn off.

Purple: software update in progress.

Yellow: internal communication problem.

In some cases, this LED may be kept off, in order to make unclear whether the Deva is active or not. How to set this will be explained later.

**Events Log**: if the icon  $\checkmark$ , is present, then saving event logs is active.

**Software**: reports the version of the software present in the Deva

**Software updated**: this column shows the status of the Deva software compared to the latest version available on the PDD. The following indications are possible:

: the Deva's software is updated to the latest version on the PDD.

: the Deva's software is not the latest available.

ኛ: the situation is not updated. A check must be launched using the button 👯 Check update.

Firmware: it shows the firmware version of the microcontroller that manages the Deva power supply.

#### **Device Settings Hot key Bar**

The following buttons are located on the shortcut bar of the Device Manager window:

C: Reboot Deva : used to launch a reboot of the selected Deva(s)

U Deva poweroff : used to trigger a shutdown of the selected Deva(s).

#### WARNING: it only works on Devas that have FW version 1.4.6 or higher.

Update software : : used to update the software of the selected Deva(s). A request to select a .deva file from the PDD disk appears and then the update starts with the three phases of upload, running, and reboot.
 Check update : launches a check of the versions of the connected Devas with respect to the last one available on the PDD by updating the "Software updated" column.

On the right the "Software Updates" link is present. The "software-installation" page of the deva.powersoft. it website opens after clicking on it.lation" del sito web deva.powersoft.it

#### **Deva Settings**

As already mentioned, once only one Deva has been selected, the Deva settings panel will appear at the bottom of the window, consisting of 4 Tabs. Let us see them in detail.

#### General

Edit Save			
Information Nickname: Deva_00358156 Part number: PF000341	General	Bluetooth	Phone Enabled
Part number: Pr00031 Serial 00358156 number: 00218400AA59	Disable RGB led	Volume (dB): -12 0 PID: 9000	Volume (dB): -18 🗢 Phone number:

In this part, the general parameters of the Deva are set. The user can change the nickname of the Deva, which by default is "Deva\_xxxxxx", where xxxxxxx is the serial number, by pressing the Edit key. In the General pane, the GPS can be activated, which will be used as a clock for audio synchronisation in the absence of a network connection with the PDD, as well as the second amplifier to connect a Deva Slave to the AUX output, and the RGB LED can be disabled in case the user does not want to show the operating status of the Deva. In the Bluetooth part, the Bluetooth interface can be enabled by defining the PID for pairing with a smartdevice, as well as the maximum volume with which the music can be played. The last pane concerns the enabling of the telephone modem to make and receive voice calls and to exchange SMS. Here, too, the volume of the Deva, when the call is put on speaker, can be defined. The "Telephone Number" field is purely for reminder purposes. This is also required in order to use the data connection.

#### Network

eneral	Voip	License								
Edit [	Save									
Wifi: new o	onfiguration					VPN: new configuration	Lan: new co	nfiguration	Data connect	ion: new configuration
Enable:	12			Enable:	IP mode:	Static IP 💌	Enable:			
Mode:	Access Point	SSID:	Deva_001052	Password:	chable:	Address:		APN:	ibox.tim.it	
Region:	EU	Channel:	2.4 GHz CH 11	~			Subnet:	255.255.255.0	Address:	
			2.4 GHz GH 11				Gateway:		Username:	
IP mode:	DHCP Client								Password:	

This is the most delicate part, as it defines how the Deva will need to connect to the PDD. The first part concerns the WIFI part. Here it is possible to set whether the Deva should turn on its WLAN card and whether it should act as an Access Point by configuring the display name as SSID and password. Please note that it is not possible to use 5GHz channels in this mode. The EU and US region, as well as the preferred radio channel can be selected. If the "Infrastructure" mode is selected, the name of the Access Point to which the Deva must connect and the password must be entered. There are two types of authentication: Personal and Enterprise. The region can be selected here as well, but above all, the user can choose the type of IP address between Static and DHCP.

Immediately to the right, the use of the VPN can be enabled, which requires a system-wide configuration, as explained later.

Setting up the LAN entails the usual two IP addressing mechanisms: static and dynamic with DHCP. The last part concerns connecting data from a mobile network. Once the checkbox is enabled, the APN provided by the telephone provider must be entered. For example, TIM uses IBOX.TIM .IT and Vodafone uses MOBILE. VODAFONE.IT. Usually, the Username and Password fields must be left blank. Once the Save button is pressed, after a few seconds, if all goes well, the address assigned by the provider to the modem will appear in the "IP Address" field.

#### Voip

General Netw	rork Volp License			
it edit	Save			
Volp: new con	figuration			
Enable:	12	Bind Ian	Audio	
Registrar:	192.168.7.1	Interfaces:	Volume (dB): -18 🗘	
User:	110		Speaker output:	
Password:	110		Aux output:	
Stun:				

Deva can function as a VoIP telephone terminal. In this part, the user must enable the functionality, enter the IP address of the Registrar, which is none other than the SIP server, such as Asterisk that runs under Linux and is open source, enter the User number, that is, the extension to be called to speak through the Deva and the password to authenticate. It also necessary to set the type of binding, that is, the interface with which the server is reached. It can be "lan", "wlan", but also both using "\*". As always, the volume of the Deva and where to direct the audio can be defined, whether on the speaker of the Deva or on the AUX audio output, but also on both.

#### License

inse: current status		
ISSUER: Powersoft S.p.A. <info@powersoft.com> DEVA ID: 0021840048BC</info@powersoft.com>	Upload licer	ise file
DEVA ID: 00218400488C DEVA SERIAL: 001058 SSUED: Mon May 2 2022	£0	Upload license file
EATURES: SIP: VALID BEFORE Mon Dec 31 2040		

To activate the SIP function, it is necessary to purchase a license thanks to which a .lic file is provided to be uploaded from the latter panel using the "Upload license file" button, browsing the folders of the PDD disk on which the file was copied. If the file is valid, the license details will be shown in the left pane. In particular, the expiration date.

To request the .lic file, it is necessary to provide Powersoft with the Serial number and "Deva ID" of the Deva on which the SIP function must be activated. This data is visible in the General pane:

Edit 🔚	Save	
formation		
kname:	Deva_00279360	
rt number:	PF000341	
ial nber:	00279360	
a Id:	00218400540D	

### System Admin

In this window a whole series of general system parameters can be configured and some maintenance operations can be performed. Below is the menu in detail:

#### **Predefined messages**

In this screen, the 10 default messages that will always be present on the system Devas can be configured. To edit standard messages, simply click on the icon  $1^{\circ}$ , select a library file from the list that will be displayed and press the Save button. Clicking on the icon enables to listen to the file on the user's PC.

kevo izta					Service .
System	Zones 🎵 Library 🗊 Playlist	Settings Admin			
Predefined messages	Type	File name		in the second	
	Welcome	Welcome.mp3	it .	•	
Predefined Fm radio	Goodbye	Hockman conti 1.mp3	łt	•	
Predefined Web radio	Alarm 1	Alarm.mp3	it.	•	
(now Deva	Alarm 2	francesco.mp3	it.	•	
	Alarm 3	cadolingi ita eng.mp3	it.	•	
Contacts	Standard 1	welcomeconti1.mp3	ii	•	
Jsers management	Standard 2	Messaggio Conti 1.mp3	łt	•	
Slobal Settings	Standard 3	temperatura.mp3	łt	•	
Aaintenance	Standard 4	Contolled area.mp3	it.	•	
saintenance	Standard 5	- DEVA EMERGENCY.mp3	it.	•	

#### **Predefined Fm Radio**

In this screen the user can store the data of the favourite FM radio stations.

← → C ▲ Nor	sicuro ( pdd.powersoft.it.8080		Ó 🖈 🖬 🛔
evolutor			
Dig System	F Zones 🎵 Library 👔 Playlist 💱 Settings 🖨 Systems		
vodefined messages	And		
redefined Fm radio	Normal- Caussica	Frequency 93.30	
		93.30	11 0 11 0
redefined Web radio	Casica	103.30	
now Deva	horado		11 B
ontacts	Isoradia	103.30	ii (i
leers management	Mitology	99.10	1 0
	Pitology	99.10	11 @
lobal Settings	RADIO 2	91.10	11 @
aintenance	RADIO 2	93.10	11 @
	RDS	98.00	11 @
	RDS	98.00	11 @
	RTL.	102.40	it @
	RTL.	102.40	រដ 🗇
	Radio 1	87.80	11 @
	Radio Deejay	99.70	a 1i
	Radio Montecarlo	106.40	ii 📾
	Radio24	103.90	ii 📾
	Radio24	103.90	it @
	13 prim	107.10	16

After clicking on the icon state and the panel where the name of the radio and its frequency can be set will

open. To change a radio already entered, simply click on the icon # or double click on the line. To delete a radio, click on the icon m. See next image.

	sicuro   pdd.powersoft.it:8080		:0 ☆ □	
devicitit.				(Andrea
System	Zones 🎵 Library 🗊 Playlist 💱 Devices 🌣	System Admin		
Predefined messages	Add			
Predefined Fm radio	Nama	Prequency	e it	Ô
Predefined Web radio	Gassica	Save Cancel	11	
Predefined web radio	Cassica	93.30	1	0
Know Deva	DELAY	23.30	11  1	0
Contacts	Ireland Christmas		1	Ô
Users management	Isoradio	103.30		Ô
	Isoradio	103.30	11	0
Global Settings		103.50	1	0
Maintenance	Lounge		11	Ô
	Mitology	99.10	11	Ô
	Mitology	99.10	it.	
	RADIO 2	91.10	11	8
	RADIO 2	91.10	łt	0
	RDS	98.00	łt	1
	RDS	98.00	łt	Ô
	RDS		łt	6
	RTL	102.40	łĭ	Ô
	RTL.	102.40	łĭ	Ô
	Dadia 1	67.6N	.ogout 22.04.19	-

#### **Predefined web radio**

In this screen, it is possible to store the internet addresses of the preferred web radios.

To be sure that the addresses are valid, it is necessary to verify that entering them a browser on the PC, allows direct listening of the radio station, without other interactions.

• • • Orva S				
	n sicure   pdd.powersoft.it:8080		ô 🖈 🛛	i 😩
evolution				There
🖧 System	Zones 🎵 Library 🗊 Playlist 💱 Devices 🗱 Settings			
redefined messages	Add			
	Name	URL	- E	1
Predefined Fm radio	DEEJAY	http://radiodeejay-lh.akamaihd.net//RadioDeejay_Live_1@189857/master.m3u8	11	Ô
redefined Web radio	DEEJAY	http://radiodeejay-lh.akamaihd.net/l/RadioDeejay_Live_1@189857/master.m3u8	łt	Ô
(now Deva	Ireland Christmas	http://ice31.securenetsystems.net/XMASPMM	11	Ô
	Ireland Christmas	http://ice31.securenetsystems.net/XMASFMM	łt	Ô
ontacts	Lounge	http://c5.radioboss.fm:8149/autodj	1	Ô
isers management	Lounge	http://c5.radioboss.fm:8149/autodj	łĭ	Ô
llobal Settings	RDS	http://stream1.nds.it:8000/ndsmp3	łĭ	ô
taintenance	RDS	http://stream1.nds.it:8000/ndsmp3	łĭ	Ô
	Radio Mugello	http://94.23.66.114)8071	łt	۵
	Radio Mugello	http://94.23.66.114:8071	łt	Ô
	Radio24	http://radio24-ih.akamaihd.net/i/radio24_1@99307/index_1_e-p.m3u8	it	Ô
	Radio24	http://radio24-ih.akamaihd.net/i/radio24_1@99307/index_1_e-p.m3u8	it.	Ô
	Soul Radio	https://22333.live.streamtheworld.com/SOULRADIO.mp3	11	Ô
	Soul Radio	https://22333.live.streamtheworld.com/SOULRADIO.mp3	it	Ô
	Virgin	http://icecast.unitedradio.it/Virgin.mp3	łĭ	Ô
	Virgin	http://icecast.unitedradio.it/Virgin.mp3	łĭ	Ô
	Virgin Rock2K	http://icy.unitedradio.it/Vingin_02.mp3	łĭ	Ô
	Maala Bash3V	- Meter / Parci and and an United as (63 ann 3)	16	

The management is exactly the same as that of FM radios, as explained in the paragraph above.

#### **Known Devas**

This screen allows to store the static IP addresses of the Devas connected to the system. Normally, the DSM automatically detects the connected Devas by sending broadcast packages. In some installations, these packages may be blocked for security reasons. In this case, the Devas must have a static IP address so that the DSP can contact them thanks to the data entered in this window:

+ > C AN	on sicuro   pdd.p	owersoft.it:8080					₫ ☆		1
evalution				-				1 Parts	-
System	🌣 Zones	Library	Playlist	Devices Settings	System Admin				
redefined messages		j Clear							
edefined Fm radio	IP Address			_		_			Ô
edefined Web radio									
tow Deva									
ontacts									
ers management									
obal Settings									
aintenance									

After Clicking on the icon 📻 Add, the pane will open and it is possible to set the IP address of a Deva. To delete an address, the user can click on the icon 👼.

#### Contacts

In this window, the references of the people who must be able to communicate with the system via SMS, voice GSM calls and SIP VoIP calls can be managed

System	Zones	J Libr	ary 🗊	Playlist	Devices Settings	C System Admin				
redefined messages	Add					1115				
Predefined Fm radio	Nama	Summer	Prone		tions SMS Monito		Voice cell	Velp call	1.1	4
recenned Pm racio	Giampiero	Raschellà	+39346181	- 98	(#)	80	(W)	10	łŤ	Ô
redefined Web radio	Cosimo	Cecchi	103	0	-	13	10	10	łt	Ô
Know Deva	Genetec	Ufficio	1004	12		12	12	10	4t	Ō
	Telefono	Ufficio	104	- 13	10	12	180	12	11	Ô
Contacts	Linphone	Ufficio	100			10	191	12	41	Ô
Jsers management	Security Desk	Ufficio	1002	0		13	8	12	11	1
ilobal Settings	Glampiero	Sipelia	1003				12	12	11	ā
	Giampiero	Cellulare	105	63			12	N	-11	Ô
faintenance	Davide	VolP	112			10	12	120		-
									11	0
	Francesco	Contril	109	12	8	123	12	12	łt	Ō
	Davide	Cellulare	+39380385.	- 18	12	192	121 1	10	łt	Ô
				65				10	11	Ô
					Save	Cancel				

After clicking on the icon Add, the pane where you can enter the name and surname of the contact, the telephone number, or the SIP extension, will open, and the various communication channels can be set. In particular:

SMS Notifications: it enables the sending of SMS notifications (events) SMS Monitor: it enables the sending of monitor SMS (reboot, etc.)

SMS Control: it enables the reception of SMS containing commands for the Deva Voice Call: it enables voice calls in and out on mobile network VoIP Call: it enables voice-in and voice-out calls over VoIP-SIP protocol

To change or delete a contact, use the usual procedure.

#### **Users Management**

This window allows to manage system users. By default, there is the Admin user who has administrator rights. Clicking on the icon Add, will open the pane where a new user can be added, to whom a name and password for the login can be assigned. From the drop-down menu one of the following three roles can be assigned:

Admin: it can do anything

Standard: it can do everything except modify Device Management, System Management and remove Devas. Guess: it can only manage the volumes, the mute, the LED spotlight, view the map, turn on and off the video camera, with which it can take photos and view the diagnostics and logs.

System	🗱 Zones	Library	Playlist	Devices Settings	System			
Predefined messages	Add							
	Login	_	Password	Name	_	Role		
redefined Fm radio	admin		*****	Admini	strator	Admin		i ii
Predefined Web radio	luca		*****	Admini	strator	Admin		ł <b>t</b> (
(now Deva	cadolingi		*****	cadolin	gi	Standard		i î
	massimo		*****	Massim	o Ghedini	Standard		i î
Contacts	guest		*****	guest		Guest		11 0
lsers management	sixthsense		*****	Sixth S	ense per APP	Admin		i i
ilobal Settings	filippo		*****	filippo	vallini	Admin		łt (
faintenance	powersoft		*****	Tirocin	anti	Admin		11 0
lunicentinee							~	11 1
				Save	Cancel			

Modification and deletion methods are the same.

### **Global Settings**

In this window it is possible to set some parameters related to the clock, VPN and the Twilio SMS service via cloud.

eva Manager			uni M	v.					Vomoi?
System	Zones 🎵	Library	Playlist	Setti	ces ngs	System Admin			
redefined messages	Date and time se	ttings							
	Date:	07/07/202	2						
redefined Fm radio	Time:	4:13 PM		*					
redefined Web radio	Timezone:	Europe/Ro	me	~					
							lf Edit	B	Save
now Deva									
ontacts	VPN								
	IP Address:	93.14	5.228.93						
sers management							<b>↓</b> ¥ Edit		Save
ilobal Settings							C. C		
	Twilio SMS accou	int settings							
laintenance	Account SID:			B41e7280	Send tes	st SMS			
	Account Token:			5e599	Test num	ber:			
	Sender	+19							
	Number:								
	Do not resend same message for (s):	60		\$					
	ior (s).						16		
							JT Edit		Save

In the first pane the user can set the time, date, and time zone of the PDD. This is useful if one is working on the PDD on board Deva, because it allows to set the exact time in the absence of connectivity with an external PDD or GPS coverage.

In the VPN pane the public IP address of the VPN server that could run on the PDD itself can be set. In this case, the address of the PDD must be published on the Internet. Typically, the public address is that of the router\gateway that gives connectivity to the local network whose Firewall is programmed to forward connections on ports 8080 (for DSM9 and 1194 (for VPN) to the internal address of the PDD.

The last panel allows to configure the Twilio cloud SMS service, useful to receive notification and/or monitoring SMS messages without inserting a SIM in each Deva. The "Account SID", "Account Token", and "Sender Number" fields must be collected from the site <u>https://www.twilio.com/messaging</u> after activating an account. The "Do not send the same message for (s)" field is used to not receive the same SMS continuously for "s" seconds if two or more Devas detect the same event.

To edit the fields described above, press the Edit button and then save the settings by pressing Save.

#### Maintenance

This window allows to access some important maintenance functions.

	hava Ma		× +								-	~
	Non s	sicuro   pdd.p	owersoft.it:8080							4		A I
G System	۵	Zones	🞵 Library	Playlist	Devices Settings	•	System Admin				Ĭ	
Predefined messag	pes	System Bac	kup/Restore									
Predefined Fm rad	ю	Backup										
Predefined Web ra	dio	Restore										
Know Deva		System Res	tart									
Contacts		Restart	During the s	ystem restart all De	va will be reconnec	ted: the	audio play co	uld be interrupted	•			
Jsers managemen	t	System Log										
Global Settings		Backup										
Maintenance												
								Ready	Logout	22.04	10 84	1705462

In particular, the **Backup** key allows to make a complete copy of the system and save it in a compressed file that can be saved on an external media and then restored in a new PDD using the **Restore** key and selecting the previously stored file.

The **Restart** key sends a command to the DSM to restart the Back End. It can be useful if the DSM has an incorrect behaviour that could be fixed without the need to restart the Linux machine.

Finally, the Backup key of the system log allows to save the logs of the entire system in a compressed file to be analysed with appropriate tools.

## The Library

After performing the basic configurations of the system, the audio files that will compose the library can be uploaded. This is done from the following Library window:

de	- → C ▲ Non sicuro   pdd.powersoft.it:8080	*						Tarray
-	System 🌣 Zones 🎵 (litrary	Playlist	State	ettings 🌣 Syste	m			
1								
1	File name	Title	Artist	Album	Year	Length		_
	- DEVA DEMO ROOM.mp3				0	0:15	•	
1	- DEVA EMERGENCY.mp3				0	0:10	•	
3	- DEVA INTRODUCTION.mp3				0	0:29	•	
1	001. Herman Brood & His Wild Romance - Saturday N			Gold Rock	2015	3:43	•	
3	002. Oasis - Don't Look Back In Anger.mp3			Gold Rock	2015	4:50	•	
3	003. Queen - Innuendo.mp3			Gold Rock	2015	6:29	•	
3	004, Within Temptation - Stand My Ground.mp3			Gold Rock	2015	3:58	•	
3	004. Wolfgang Amadeus Mozart - Klarinettenkonzert (			100 best Classic Music	2015	7:01	•	
3	005. Alice Cooper - Polson.mp3			Gold Rock	2015	4:30	•	
3	005. Antonio Lucio Vivaldi - Le Quattro Stagioni (Op			100 best Classic Music	2015	10:50	•	
1	006. American Authors - Best Day Of My Life.mp3			Gold Rock	2015	3:15	•	
3	006. Johann Pachelbel - Kanon In D.mp3			100 best Classic Music	2015	4:25	•	
3	007. Extreme - Hole Hearted.mp3			Gold Rock	2015	3:38	•	
3	008. Golden Earring - Radar Love.mp3			Gold Rock	2015	5:05	•	
1	009. Kane - Rain Down On Me.mp3			Gold Rock	2015	4:09	•	
	01 - Andrea Bocelli - La voce del silenzio.mp3				0	4:56		

After pressing the button Add a window will open that will allow to browse the PDD memory and select one or more mp3 files to load into the library by pressing the **Load** button.

← → C ▲ hor area 110,100,1000					-			0 0	
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				E Dearth		A Sep & Sub- 1			
103, Online Spring - Baller Green (191				O Mat		A Stalid-ta	Figure Depression		
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Once this is done, a procedure will start that transfers the files within the system by entering the data in the database: file name, title, artist, album, year and duration.

To remove a file, simply select it and press the button **memore**. With the button **b** the song can be listened to on the PC.

## The Playlists

The DSM allows to create playlists composed by the music tracks and audio messages previously entered in the library. This is what the window looks like:

← → C ▲ Non sicuro   pr	u.powerson.iC8080				40 0 3	
devolution						Contraction in the
System Zones	Library	Playlist	Devices Settings	System Admin		
💼 Add 💼 Remove 🏦 Edi						
Navlist's name	Length	Number of	files			_
New_Official_Playlist	168:24	39				
Rotary1	192:21	47				
PLAYLIST_AUTUMN_2015	161:51	38				
Classica	230:06	37				
Pop Rock 2017	220:49	54				
Gold Rock 1	143:59	35				
Gold Rock 2	156:58	39				
Ambient Jazz	45:33	10				
SPANISH GUITAR	72:38	16				
Kmas 1	103:13	31				
Xmas 2	110:19	30				
DEM0_03_2019	6:06	1				
POP2019	109:12	28				
Natale Sesto	221:21	69				
OP Sesto	397:23	103				
Sesto 8 Luglio 21-23	53:27	15				

To create a new playlist, click on the button **and the following window will open**:

	Deva Manager	+ × +							\$		- + 1
devolution	k Non sicuro   pdd.	powerson.ic.ouou					-	0	н		Way and
System	🔅 Zones	J Library	Playlist	Devices Settings	System Admin	New Zone					
-A-Members											
Save											
Zone name:	0										
Available Deva	_				Assigned Deva	_	_		-	-	
				Add							
				Remove							
8						Ready.	Logo	ut	22.04	.19_84	7e5d62

Simply enter the name of the playlist and move the songs from left to right by selecting one or more titles from the left pane and moving it to the right with the button Add. When the list is complete, click Save. To remove a song from the playlist, select the title in the right pane and click on the button Multiple selections are allowed in both panes. In the right pane, the order of the songs can be changed by simply dragging a title from the list up or down. Once the playlist is saved, it will appear in the list with the total duration and number of tracks. To edit a playlist, double click on the grid row or click once to select the row and click on the button fracts. To delete a playlist, simply select it and click on the button fracts.

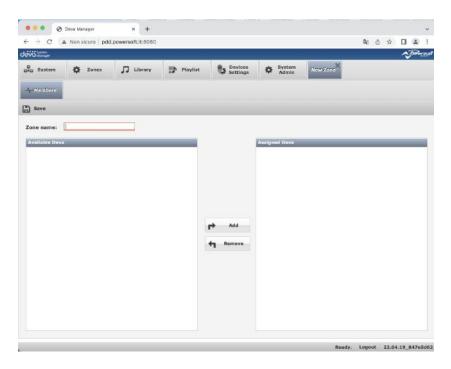
## The Zones

The DSM makes it possible to organise the Deva system in areas where programming is homogeneous. For example, in a theme park system there will be Devas installed in the car parks, those installed in the restaurant area, etc.

Creating zones allows to simplify the programming of the Devas by setting the operating parameters of the zone that will automatically propagate to all the Devas belonging to the zone itself. Here is the Zones window:

		r story mouro 1 poor	powersoft.it.8080						<b>R</b> (	u	14			÷
dewi	Distance.											Ŷ	<b>.</b>	2
0.0	System	D Tones	J Library	1	Playlist	Devices Settings	٥	System Admin						
80	Add													
	Zone name													
6	Cont/S-Outd	loor		łt	8									
ý.	ContiS-Indo	ar		it.	8									
13	Cadoling-D	utdoor		it.	8									
14	Cadolingi-Pr	oduction		it.	8									
15	Cadolingi-W	arehouse		11	8									
16	ContiS-Sale			11	8									
18	Contil-Outd	teor		11	8									
11	Cont/5-Rece	ption		11	8									
22	Contil3-Ree			11	8									
23	Conti13-Ind	kar		11	8									
24	Contil-Indo	or		11	8									
27	Application	Engineering		11	8									
10	DemoRoom			11	8									
11		EMERGENCY												
		ETHERING POLY		11	8									
32	RAD			11	0									
33	Contil3-Ree	ofLounge		11	Ô									

To create a new zone, click on the button 🖬 Add and the following window will open:



As for the playlists, after entering the name of the new zone, Devas installed in that area, chosen among those not yet associated with any zone, must be added from the left pane to the right one with the usual **Add** button. To remove a Deva from the zone, just select it from the right pane by clicking on the **Remove** button. At the end, click Save and the new zone will appear in the grid.

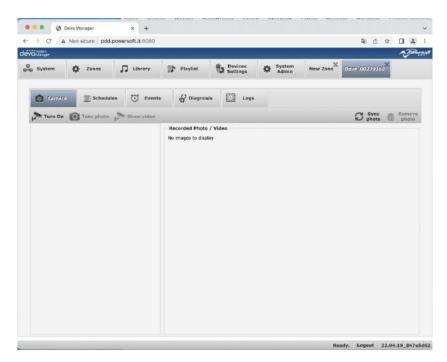
# Schedules

Let us now see how to configure schedules. A distinction must be made in the case of working on a Deva that does not belong to any area or on an area that includes several Devas.

It is not possible to individually configure a Deva that belongs to a zone.

In the case of a single Deva, to access the configuration windows of Events and Scheduling, the user must select the Deva from the grid of the **System** window and press the button <sup>If Detail</sup>. Alternatively, double-click on the Deva line to be configured.

The following window will open:

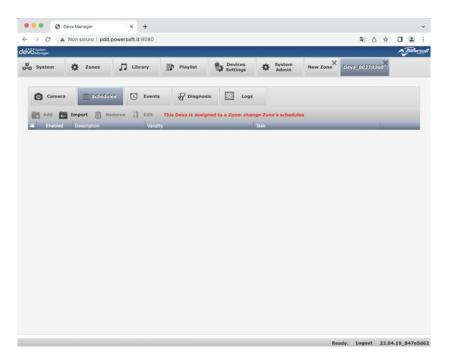


In the case of a zone, the user must open the Zones window by pressing the relevant tab *zone* and click on *the icon of the zone to be configured or double-click on the grid line.* 

As it is shown, the **Scheduling** and **Events** are present in both windows.

The related windows are identical, therefore we will explain them only once knowing that in the first case the settings will be sent only to the selected Deva, while in the second case they will be sent to all the Devas belonging to the Zone. Let us start with Scheduling.

Clicking on the tab Scheduling will open the following window:



In the case of Zone, the **Diagnostics** and **Logs** tabs are not present. To create a new schedule, click on the button **Add**. The following window will open:

Description:			I Enabled		
Validity from:		📑 to:			
Activation time			Actions		
Start time: Until:	2		Light		
Schedule type Daily Weekly M T W Th C C C C C Monthly Days:			Play predefined message Play from Audio Library Play playlist Play FN Radio Auxiliary Input Take Photo Request PDD action Sleep mode Switch on videocamera		
				Save	Xa

After entering the description, the type must be defined by entering the validity period of the schedule (for example for Christmas 2022 from 8/12/2022 to 6/01/2023), the start and end time, the daily, weekly, monthly, or spot mode, that is valid only for a certain day. Once this is completed, you will go to the action setting from the drop-down menu. As shown in the previous image, the following valid actions are available in the set time interval:

- 1. LED: it turns on the LED spotlight. The intensity can be set and the flashing can be activated with a certain duty cycle.
- 2. Play single file: it plays one of the 10 default messages. The file can be selected from the library, in a repetition interval in seconds, as well as the desired volume if different from the one already set on its pipeline
- 3. Play from Audio Library: it plays a file from the Audio Library. The file can be select from the library, in a repetition interval in seconds, as well as the desired volume if different from the one already set on its pipeline

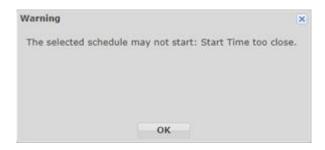
- 4. Play playlist: plays a playlist. The playlist can be selected from the playlist list and the desired volume if different from the one already set on its pipeline. The playlist is played in loop until the schedule ends.
- 5. Play FM Radio: it plays an FM radio station. A frequency, or a station from the list of favourites, and the desired volume, if different from the one already set on its pipeline, can be set.
- 6. Auxiliary input: it amplifies the signal connected to the mini-jack auxiliary input on the rear panel of the Deva.
- 7. Take a photo: it takes a photo with the camera. It is possible to a single or multiple shot every x seconds.
- 8. Request PDD action: it is possible to choose "Live Mic", to stream the audio input of the PDD (microphone or line-in), or "Web Radio" by entering the name of the web radio among those included in the list of favourites.
- 9. Sleep mode: it activates the low power state during which the Deva's activities are suspended.
- 10. Turn on video camera: it turns on the video camera.

The "Enabled" check-box allows to enable or disable the schedule, without having to delete or reinsert it every time it is needed.

If the Save button is pressed, the configuration will be saved on the PDD, but not yet on the Devas concerned, as will be indicated by the message that appears on the screen that also reminds the user to avoid overlapping of the scheduled playlists:

Warnin	9 ×
⚠	ATTENTION: overlying playlists will cause an unexpected playback. Remember to upload data to let scheduling work.
	ОК

The System window shows that in the column "Updated data" of the Devas affected by the schedule just set, an icon ✓ indicating that the configuration of the Deva is no longer aligned with that set on the PDD is present. To align the Devas click on the button <sup>Upload data</sup>. When scheduling a playlist whose files are not yet present on the Devas, it should be borne in mind that it will take some time for the data to be transferred on board. The schedule must therefore be set up well in advance of the start time. This is signalled by the following message:



A very convenient function is the one that allows the user to import a schedule already set for another Deva, or zone. To access this function, simply click on the button and select the desired schedule from the list that is displayed by selecting the Deva or the Zone that contains the schedule to be cloned from the drop-down menu:

Description	Task	Start Time	Enable
Mattina	Play playlist	08:30:00	*
Mattina2	Play playlist	10:30:00	*
Pomeriggio	Play playlist	13:00:00	-
Pomeriggio2	Play playlist	14:30:00	-
Natale	Request PDD action	08:30:00	

Multiple selection is allowed to import multiple schedules at the same time.

### **Events**

To set the events, select a Deva or a zone and then click on the tab 🔯 Events, as seen in the previous paragraph for the schedules. The following window will open:

••• 📀 De	eva Manager	× +											~
$\leftarrow \rightarrow $ C A	Non sicuro   pdd.p	owersoft.it:8080							Q <sub>0</sub> (	1	☆		<b>a</b> 1
devo Manager												20	Pres
System	Zones	Library	Playlist	Devices Settings	Sy Ac	stem Imin	Zone - Contif	3-Roc	fLoung	×			
-\/- Members	Schedules	Events											
Contract of the second s	Import 🗑 Rer												
Enabled	Guard mode D	Description			-	_	_	-	-		-		
0							Rea	dy.	Logout		22.04.1	19_84	7e5d6

Clicking on the button stand will open the following window:

ents			
Description:	Enabled		
Conditions	Actions	Request PDD action	
Guard mode         Instant Amore a sparad mode are all enabled/disabled through the system view         Interval         Interval         Motion detection         Battery status (threshold: 11.8 V)         Discharged         Power supply         Available         Lost         Network Connection         External trigger         Active       Inactive         External Software	Light Intensity (5%): On/Off Interval On msecs: Off msecs: Light on entire zone Play from Audio Library Volume 100% Play on entire zone Play on entire zone Take a photo	Request PDD action  Send SMS SOS Call SOS Voip Call	
Label:			
Advanced Settings			
		🖨 s	ave X

After entering a description in the relevant field, the user can decide whether the event will be active or inactive based on the status of the "Enabled" check-box. If the "Guard mode" check-box is enabled, the event

can be activated and deactivated using the button in the shortcut bar of the Systems window. There are two sections: Conditions and Actions.

In the Conditions section, the time interval in which the event is active and the input to be used as a trigger to start the action can be set. The following are available:

- 1. Motion detection: this is the status of the PIR sensor
- 2. Battery status (threshold: 11.8V): battery low voltage status. The user can choose whether to have the trigger when the voltage drops below the threshold (discharged) or when it rises above (charged).

- 3. Power supply: presence of external power supply. The user can decide whether to detect the availability or loss of power.
- 4. Network connection: availability of the network connection, at least one between LAN, Wi-Fi. The user can decide whether to detect the availability or loss of the network connection.
- 5. External trigger: status of an external button connected to the digital input available on the rear panel of the Deva. The user can decide whether to detect the closure or the opening.
- 6. External software: the DSM can receive triggers from external software via protocol strings that contain a keyword. This keyword must be entered in the Label field to be interpreted as a trigger.

In the right section all the actions that can be launched when the event occurs can be found. In particular, the following actions can be performed:

- 1. Light: turn on the led spotlight at a certain percentage of intensity. A flashing time can also be set by choosing the On and Off time. In the case of an Event set on an area, the user can choose whether, upon its occurrence, if the LED spotlight only of the Deva that detected the event, or of all the Devas belonging to the area must be turned on.
- 2. Playing files from the Audio Library: plays the selected file from the Audio Library. The user can set the volume of the pipeline and whether the file should be played only by the Deva that detected the event, or synchronously by all the Devas belonging to the zone.
- 3. Take a photo: it takes a photo using the video camera
- 4. Request PDD Action: it allows to send an SMS using the cloud service.
- 5. Send SMS: it sends an SMS to all contacts who have the "SMS Notifications" option activated.
- 6. SOS Call: it makes a GSM Voice call to contacts that have the "Voice Call" option active until one responds.
- 7. VoIP SOS Call: makes a VoIP Voice call to contacts who have the "VoIP Call" option active until one answers.

As for Scheduling, also for Events, it is possible to import a configuration already set for another Deva, or zone. To access this function, simply click on the button **E Import** and select the desired event from the list that is displayed by selecting the Deva or the Zone that contains the event to be cloned from the drop-down menu:

Description	Guard mode	Event	Enable	
cadolingi	×	Motion detection	-	
Temperatura		External trigger	1	

Multi-selection is allowed to import multiple Events at once.

If the "Advanced settings" check-box is enabled, the following two parameters can be set that allow the management of the trigger times of the event:

Raising Edge: is the time in seconds during which the trigger must remain active before the event is triggered Falling Edge: is the time in seconds during which the event remains active after the trigger on is more active.

For example, if I set a Raising Edge of 5 seconds and a Falling Edge of 30 seconds, for an event on the presence sensor that must turn on the LED spotlight, it is necessary that a person moves in front of the Deva for at least 5 seconds before the LED spotlight is turned on and when the person has left, the LED spotlight remains on for another 30 seconds.

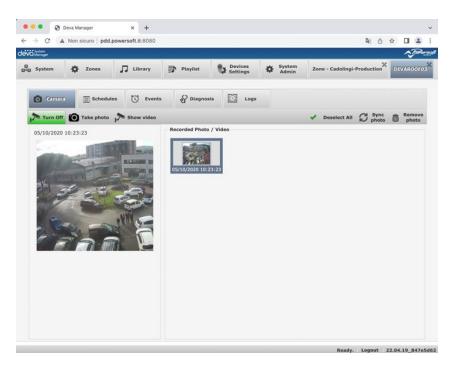
## Details

Selecting a Deva from the System window and clicking on the button line of the Deva concerned, allows to access the detail window, which was already seen to access the Scheduling and Events setting windows.

There are other tabs in this window. In particular, those to access the window relating to the Camera, Diagnostics, and Logs. Let us see them in detail.

### Camera

In this window the user can access and turn off the camera by clicking on the button run on and take a photo by clicking on the button rake photo, of course after turning it on. The camera takes about thirty seconds to make the video stream available. Here is how the window looks after taking a photo:

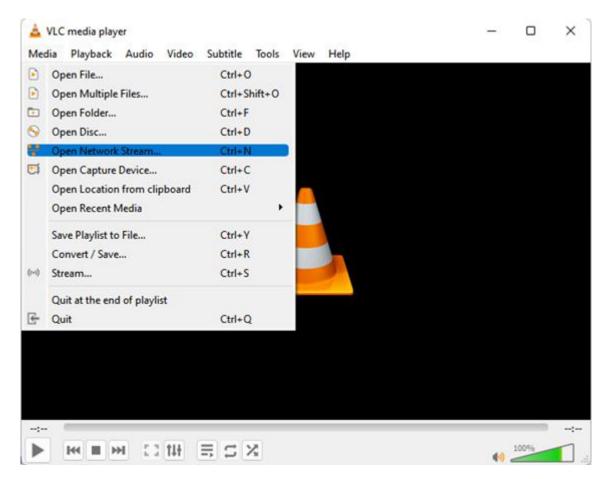


The process of taking the photo is quite long, because it includes both acquisition of the image on board Deva and the subsequent transfer to the PDD. If for some reason the photo does not reach the PDD, the button  $\bigcirc$  sync can be used to force the download on PDD. The preview of the last photo taken is displayed, on which the user can double click to open it in another full-size window. The thumbnails of all the photos taken are shown in the left pane. To view them in the preview, simply select them by clicking on them. The user can delete the selected picture by clicking on the button  $\bigcirc$  Remove photo. Multiple selection and selection\deselection of all thumbnails can be done with the button  $\checkmark$  Select All.

After Clicking on the button string to be copied and pasted on any video player or VSM (Video System Manager):

Video resctriction with Wine	dows	×
The video stream is availab rtsp://admin:123456@192	le with your favourite media .168.0.1/mpeg4	player at the URL
	ОК	

For example, if using the VLC media player the user must click on the menu item "Media->Open Network Stream", as shown in the following figure:



The video coming from the Deva can be viewed by entering the address copied from the DSM window.

Open Media			-		
🖻 File 🛛 😒 Dis	c 🕈 Network	Capture Device			
Network Protocol					
Please enter a ne	twork URL:				
rtsp://admin:123	1456@192.168.0. <b>[1/</b> m	peg4		2	¥.
rtspi//beriver.eka	nples.com/stream.ass				
http://www.you	tube.com/watch7v+gg6	A.			

Of course, the video camera must have been On for at least thirty seconds.

## Diagnostics

Clicking on the tab *Plagnosis* allows to access the window that shows all the quantities acquired by the Deva as well as various operating statuses. Below is the window:

	pdd.powersoft.it:8080					•• ♀ ◎ ☆ □			
System Manager						~			
System 🏠 Zone	s 🎵 Library	Playlist	Devices Settings	System Admin	Zone - Cadolingi-Prod	uction DEVAROOF03			
🖸 Camera 🔳 Scl	hedules 🕃 Events	🔗 Diagnosis	C Logs						
C Refresh									
Battery		Solar Panel			POE				
Voltage (V):	14.53	Voltage (V):	0		Voltage (V):	16.45			
Current (mA):         97           Power (W):         1.4           Status:         Charging		Current (mA): 0 Power (W): 0			Current (mA):	279			
					External supply				
									Short extimation:
Long extimation:	1 days & 10 hours	Current (mA): 0							
Device consumption		Amplifiers	Amplifiers			Mobile Network			
Current (mA):	260		AMP1	AMP2	Status:	Disabled			
Power (W):	3.7	Current (mA):	14	0	Sim card:	SIM not present			
Sleep mode:	Off	Power (W):	0.2		Signal strenght:				
Date & Timezone		GPS			Interfaces				
Date:	08/07/2022	Power:	Off		WiFi				
Time:	17:02:28	Last Fix:		5-03T10:41:4:	Status:	Connected - 192.168			
Timezone:	CEST	Latitude:	43.7648		RSSI (dBm):	0			
		Longitude:	11.1040	5317	Lan				
Sensors		SIP			Status:	Connected - 192.168			
		SIP:	On						
External Temp. (°C):		Registering status:		54-56-76-77	USB				
Internal Temp. (°C):	45.0	Registering messag Call status:	IDLE 200 OK			e not detected			
Pressure (mBar):		Call uri:			status: Devic	e not deletted			
Humidity (%):		Call message:							

PTo refresh the data shown in the window, click on the button C Refresh

### Logs

Clicking on the Tab Logs opens the window where it is possible to view the records of the detected events.

- > C A	Non sicuro	pdd.powe	ersoft.it:8080					07	20	0 1		
9VO Manager				: 							4	1 Auro
System	🌣 Zon	s ا	Library	Playlist	Devices Settings	System Admin	Zone - Cadolingi-Prod	uctior	ř	DEVAR	00F03	×
				0	1971							
Camer	a 🗐 S	hedules	Events	Diagnosis	CO Logs							
Camer	-	hedules	Events	Prom:	Logs	0	To: 07/08/2022	3	c	Update	. 🖨	Expe

The grid shows the events with the date and time when they occurred, the type, the description and any other data. The types are "EVENT", which indicates when the event started, and "EVENT\_DONE", which indicates when the event ended.

Filters can be entered on the description and on the time interval from date to date. To refresh the grid, click on the button **C** Update. The data can be exported to an Excel spreadsheet in CSV format by clicking on the button **Export in CSV**. The file will be downloaded to the browser's default download folder.

## Sample configuration

Let us suppose that we want to configure from scratch a small system consisting of 3 Deva HD, an Access Point (hereinafter called AP), and the PDD. The PDD is connected via LAN to the AP that integrates the DHCP server. Using the AP manual, configure the SSID with the name "POWERSOFT" and the authentication password "powersoft".

It is assumed that the DSM has already been installed on the native Linux 18.04 on the PDD, or that it runs on a virtual machine such as Oracle VirtualBox, with the network adapter configured in DHCP.

After unpacking the Devas, the battery, and an external power supply must be connected. At this point, the Devas can be turned on. After the three double beeps that indicate that the system loading procedure has been completed, the Devas, by default, will connect to the prepared AP that will provide a dynamic IP address, as it did with the PDD. The status of the AP search is indicated by the flashing of the RGB LED which, since we the power is supplied from an external source, will be green. When the LED remains steady, it means that the Devas have connected to the AP. On a browser running on a PC connected to the same PDD network, enter the web address <u>http://localhost:8080</u> and the DSM login page will be loaded. After entering the default User: admin and Password: admin credentials, the System page is accessed, which should immediately display the 3 Devas. The user can force the Deva search procedure on the subnet by clicking on the button Q Discovery.

The system is now ready to be configured. Typically, the sequence is as follows:

- 1. Uploading audio files to the Library
- 2. Creating playlists
- 3. Creating Zones
- 4. Setting Up Schedules
- 5. Setting Up Events
- 6. Refreshing data using the button 🖺 Upload data

This type of setting is very convenient for the laboratory configuration of a new system to be sent to the field to be installed. In fact, once the Devas are on the Wi-Fi network with the PDD, the user can modify the network settings depending on the requests of the system: wired, Wi-Fi, Mobile, and test everything in a controlled environment. It must be considered that the Devas, once installed at a certain height, are difficult to reach to make changes to the local configuration.

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DRIVING HUMAN AUDIO EXPERIENCE

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