Wavelight Server

Owner's Manual

--preliminary--

About this document

This manual is aimed at the end user of the Rockna Wavelight Server (WLS). It contains an overview of the device's internal architecture, specific handling details, functional description, safety precautions and product warranty details. This document is not meant for service or repair operations, as these must be carried out only by qualified personnel.

More information regarding Rockna Audio products can be found on-line at the website owned and operated by the company:

https://www.rockna-audio.com

Rockna Electronics S.R.L. Address: Strada Plopului, nr. 5, Suceava ZIP Code: 720145, Romania Phone: +40 770 125 694 – General inquires

Email: support@rockna-audio.com – Technical support contact@rockna-audio.com – General inquiries Thank you for choosing the Rockna Wavelight Server as your music source. The WLS was designed to give you countless hours of musical enjoyment.

Package Contents

- Wavelight Server
- User manual
- (Warranty Card)

Note: the package does not contain the mains cable. Please use an audio grade power cord in order to get the best sonic results from WLS.

Safety Precautions

- 1) This device is meant for indoor use only.
- 2) Protect device from excessive heat, humidity and liquid filled objects, such as vases.
- 3) Clean only with dry cloth.
- 4) Do not remove product cover while the device is plugged in the mains outlet.
- 5) Use earth grounded outlet if available.
- 6) Do not move the device while operational.

7) Lightning or static electricity can affect normal operation of the device. Make sure that it is unplugged during a thunderstorm.

8) Make sure the unit is unplugged if it is not to be used for a long period of time.

Functional Description

Front view:



Legend:

- 1. Power switch
- 2. WLS LED illuminated logo



The connectors on the back panel are self-explanatory. There is one LAN port, 3 USB ports (1 x USB 3.0, 2 x USB 2.0) and the digital outputs : I2S, Toslink, SPDIF and AES/EBU. The USB ports are mainly for connecting external storage, but can be used to connect a USB DAC or a WI-FI repeater. On the right there is the mains AC input. Note: the WLS comes from factory with either 230VAC or 110VAC setting. For 110VAC version, there is a sticker with "110v" right under the power socket. Note 2: you can manually change the input voltage from 230V to 110V and viceversa; please check procedure from page 19 of this manual. Do not attempt to change the voltage if you don't know what you are doing! If not sure, please contact your seller or a technician.

You can connect the WLS to a digital-to-analogue converter (DAC) using one of the following methods:

WLS Port	Cable Specifications
HDMI - 12S	HDMI cable, 0.5-2m length
AES/EBU	AES/EBU cable 110 Ohm
SPDIF	S/PDIF cable 75 Ohm
Optical	TOSLINK optical cable
USB	USB cable 0.5-2m length

NOTE: If a DAC is connected via USB to WLS, it will not benefit from WLS hardware upsampling audio engine.

Plug in power cord and the LAN cable which is connected to your local network*. The WLS will start to initialize itself. The WLS center logo will slowly pulsating with turquoise-blue light while during the boot process. Please check the table below for various indications of the WLS logo by changing it's color.

WLS logo	Status
Off	Unit is powered off
Pulsating turquoise	Boot sequence
Red	Network cable unplugged
Orange	Network IP address not acquired
White	Connected and Ready

After the boot process is done and WLS is properly connected to your local network, the WLS logo should stay white (meaning normal operation) until shutdown. If, by motives independent of WLS, the connectivity is lost, the color of the WLS logo will change accordingly.

To power off the unit press briefly on the power button. Wait until logo light is off. Do not remove power cord / press again to power up until the logo light is off.

*Your local router should be set to DHCP (this is the default setting for most routers) – meaning the WLS can acquire its local IP address automatically. If your router is not set to DHCP, please configure your router with DHCP enabled.

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Accessing WLS control interface

After your WLS is connected (logo is white), it's control interface can be accessed by typing in your browser **wls-xxxxxx.local** (where x's will be replaced by your serial number, located on the back of the device) or via the local IP address. In order to find out the WLS IP, there are more methods, and we recommend two of them.

a) Using Roon

By default, Roon core is enabled on WLS. Open Roon or Roon remote and look for Roon cores. You will find out WLS IP under it's name – see example below.

🥌 Roon		_	\times
	Choose your Roon Core		
	The Core is the brain of your Roon system. It manages your Audio devices, music library, and any Roon Remotes on your network.		
	WLS-02323232 Linux 6.4.15-2-liquorix-amd64. 192.168.19.128. Version 2.0 Connect (build 1311) production Ready		
	ADL-LNX Linux 5.15.0-83-generic/192.168.19.110, Version 2.0 (build 1311) production Ready		
	Set up a Roon Core on this PC		
	Use this PC		
🕅 English 🔻	Configure Roon OS devices on your network		

In this example, we can see that local IP of the WLS is 192.168.19.128. Typing this value into app or web browser will directly route to WLS control interface.

If you are already logged in Roon, you can find out the WLS IP from Settings – General:

Settings	General	
General	ROON CORE	×Disconnect
Storage	WLS-02323232 192.168.19.128	
Services	Signed in as contact@rockna-audio.com	Logout View account info
Setup		
Roon ARC	BROWSING PREFERENCES	
Profiles	Customize album display	Edit
Play actions	Allow for more covers and photos	O No
lay actions	Show hidden tracks and albums	
Library 💙	Show composer credits	Default
🏹 English 🔻		

b) Using an IP scanner program

Download and install a network IP scanner, for example: <u>www.advanced-ip-scanner.com/download/</u>

Run the program and find WLS as WLS-xxxxxx, where "xxxxxxx" is serial number.

We will find the same IP – 192.168.19.128. Please note, this is just an example, not your actual IP.

	ADL-TWO	192.168.19.117	GIGA-BYTE TECHNOLOGY CO., LTD.
—	N2	192.168.19.122	GIGA-BYTE TECHNOLOGY CO., LTD.
> 📮	WLS-02323232.local	192.168.19.128	AXIOM TECHNOLOGY CO., LTD.
—	Andrei-PC	192.168.19.130	GIGA-BYTE TECHNOLOGY CO., LTD.

Once the WLS IP is known, you can access the control interface by typing it in your web browser or into the mobile app. Detailed explanation of the WLS control interface can be found below.



WLS interface accessed via web browser – note the address bar, where is exactly the WLS IP.

Description of the control interface

WLS graphical interface is clean and easy to navigate. There is a left justified column with main sections. When selected, one section will reveal it's own settings, horizontally on the right.

The structure and options available will grow in time, so make sure you have WLS updated to latest version.

The main sections are :

Audio - with subsections :

-I2S processing – can set the output to a desired rate or format:

- Native (same sample rate and format as the file)
- 352/384KHz PCM
- DSD256
- DSD512

- **SPDIF PCM limit** – some dacs will not work properly if on input the rates are higher than 192KHz. Please check your dac capability to set the limit. Options are:

- 384 KHz
- 192 KHz

- **SPDIF DoP support** – some dacs will accept DSD on spdif compatible inputs. Please check your dac capability before setting the right option:

- DSD64
- DSD128
- no DoP supoort

- **PCM Phase response** – this parameter will configure the impulse response of the WLS hardware audio engine when PCM upsampling is enabled:

- Linear
- Minimum phase
- Hybrid phase

- **I2S mode** – for extended compatibility with other I2S input dacs, any combination with the inverted signals is available. There are 2 major modes :

- Rockna mode (to be used with any Rockna dacs by default)
- Custom mode (bit-clock, left/right clock, serial data and dsd data can be inverted)

PCM Upsampler phase response Hybrid	
I2S port configuration	
🔿 Rockna (Default) 💿 Custom Mode	 Invert bit clock Invert left/right clock Invert serial data Swap DSD channels

Servers – currently Roon and MPD servers are pre-installed on WLS.

Roon Server	DISABLE ENABLED
Music Player Daemon (MPD)	DISABLED ENABLE
Music Player Daemon (MPD)	DISABLED ENABL

Services – as WLS can work as audio endpoint, not only as a server. Currently installed services are : Roon Bridge, Upnp, OpenHome, Hqplayer NAA, Airplay (Airplay password is "WLS")

Services	
Roon Bridge	DISABLED ENABLE
UPnP A/V	DISABLED ENABLE
OpenHome	DISABLED ENABLE
HQPlayer NAA	DISABLED ENABLE
AirPlay	DISABLED ENABLE
ð AirPlay	

Important note : Once a server or service is enabled, all others will be disabled.

Settings – here you can view WLS configuration (IP, hostname, serial number) and you can manage system updates.

IDud Address	100 100 10 10
IPv4 Address	192.168.19.128
s/N	WL5-2323232.10Cdl
<i>u</i> /··	
Update	
Update N	ow
Update N	ow
Update N	ow
Update N App Version: 1.11	ow
Update N App Version: 1.11 • Storage management	ow
Update N App Version: 1.11 • Storage management	ow
Update N App Version: 1.11 • Storage management	ow
Update N Version: 1.11 • Storage management Frontend Version: 1.11	ow
Update N Version: 1.11 • Storage management Frontend Version: 1.11 • Storage management	ow
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Update N App Version: 1.11 • Storage management • Storage management • alled versions 110	ow

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If any updates are available, the Update Now button will be active. Press it and wait until update process is done. Note: is recommended to stop music playback before updating the WLS.

Adding music to WLS internal storage

In order to add music to internal storage, a PC or a Mac computer connected to the same network with the WLS is required.

For PC, follow the actions below :

- In search bar, type turn Windows features on or off and access this setting
- Check if SMB 1.0/CIFS File Sharing Support is enabled; if not, enable the features like in the red rectangle below and restart your computer.

👿 Windows Features			\times
Turn Windows features on or off			?
To turn a feature on, select its check box. To turn check box. A filled box means that only part of th	a feature ne feature	off, clear it is turned	ts on.
			^
Microsoft Defender Application Guard			
🗉 🔲 Microsoft Message Queue (MSMQ) Ser	rver		
Microsoft Print to PDF			
Microsoft XPS Document Writer			
🗄 🔲 🔒 MultiPoint Connector			
Remote Differential Compression API S	Support		
Simple TCPIP services (i.e. echo, daytin	ne etc)		
🖃 🔳 📙 SMB 1.0/CIFS File Sharing Support			
SMB 1.0/CIFS Automatic Removal			
SMB 1.0/CIFS Client			
SMB 1.0/CIFS Server			
SMB Direct			
Telnet Client			
TFTP Client			
Virtual Machine Platform			
Windows Hypervisor Platform			
Windows Identity Foundation 3.5			
Windows PowerShell 2.0			
Windows Process Activation Service			~
Mindows Deviasted File System			
	ОК	Cano	:el

- After the step below, access the File Manager by going on the Network section.



- Type over "Network" the WLS IP using double backslash character (in our example we found out the IP before) : <u>\\192.168.19.128</u>; the WLS internal drives will reveal. *Note : use your own IP, not the one above, which is just a example!*



- Double click on "Drive0" or "Drive1" to see their content, copy or delete music files.

For Mac computers :

Setting Roon

The WLS is preinstalled with Roon core which is enabled by default. This means you can immediately use it if you have any roon control app installed on your tablet/phone or computer.

Open the control app and choose your Roon core, by selecting the WLS Roon core , which will appear as "WLS-xxxxxx" , where x's are your serial number, like in the example below, by pressing "Connect".

Choose your Roon Core

The Core is the brain of your Roon system. It manages your Audio devices, music library, and any Roon Remotes on your network.

ADL-LNX Linux 5.15.0-86-generic/192.168.19.110, Version 2.0 (build 1311) production Ready	Connect	
WLS-2323232 Linux 6.4.15-2-liquorix-amd64/192.168.19.128, Version 2.0 (build 1311) production Ready	Connect	

Roon will prompt for a username and password. You will need a Roon active account in order to use it on the WLS. After log-in, a dialog for adding music will appear. Press "Add folder" and select the icon showing a disk drive.

	Add your music		
lf you keep your music o Your files	n a USB drive or NAS, click "Add folder" below to import your collection. Add folder won't be moved or modified in any way	Choose music storage fold Selected folder	ler] root
Yc	Continue u can add a storage location at any time.	. /	Folder listing

From the list that opens, choose "Media" and check in the next screen if the path looks like in the example below.

Choose music storage folder					
Selected folder 🕼 WLS-2102345 ゝ 💿 /					
0.	Folder listing		C' 1		
	🗀 lib				
	Lib32				
	🗋 lib64				
	libx32				
	lost+found				
	🗅 media				
	🗅 mnt				
	🗀 opt				
+ Add network share	~				
New folder		Select this folder	Cancel		

Choose music storage fol	der	
Selected folder	🗅 media	
0.	Folder listing	C' ↑
	🗀 drive0	
+ Add network share		
New folder	Select this	folder Cancel

This is the correct path and Roon will automatically index everything from the internal WLS drives; you can now press "Select this folder" button. If all good, the next screen will look like below and you can press "Continue".

Add your music	
🕼 WLS-2102345 ゝ 💿 / ゝ 🛅 media	Remove
Add folder	
Your files won't be moved or modified in any way	
Continue You can add a storage location at any time.	

In the next screen Roon will ask you about existing accounts from streaming services like Tidal, Qobuz or KKBOX. You can set those now or anytime later.

Roon		- 🗆 X							
🔇 Go back									
	Add a music service								
Expand your	library with millions of lossless alb	ums from the							
artists you lov	e. Discover new favorites, and add Roon library with a single click.	I them to your							
	, 0								
*** TIDAL	Q qobuz	ΚΚΒΟΧ							
Stream millions of lossless and MQA tracks.	Enjoy millions of High resolution tracks, up to 24/192.	Over 90 million tracks right at your fingertips.							
Start a free trial today!	Enjoy 1 month free!	Sign up today!							
Get started	Get started	Get started							
	No thanks								
(ঈ) English ▼	You can always add a music service later.								

Final step is setting the WLS as Roon audio device. Under "Connected to Core" section, you will find "WAVELIGHT SERVER – ALSA", which has to be enabled.

	c	et un vour A	udio	devices	
	Connect any si your Roon	upported Audio Core and they'll a	device automa	to your local network atically appear below.	or
💻 Th	his PC				
	System Output Audio will play out the default device	Enable	0	AudioByte ASIO	Enable
		Show 4	more 🔻		
Conne	ected to Core These devices are co WAVELIGHT SERVER ALSA	Enable	у.		
roc	ADL-LNX 192.168.19.110 Linux 5.15.0-86-generic				C

After enabling, you need to set up the device like to DSD over PCM v1.0 like below, then press Finish.

Connected to Core These devices are connected to your Core directly.					
O WAVELIGHT SERVER	\$ <u>\$</u>				
ADL-LNX 192.168.19.110 Linux 5.15.0-86-generic	Device setup Disable				
Device setup	Load defaults				
Audio device Unidentified device WAVELIGHT SERVER (?) Identify this device					
Private zone Private zones can only be controlled from the machine where the audio hardware resides. They do not participate in grouped playback.	O No				
DSD playback strategy	DSD over PCM v1.0 (DoP)				

Finally, you have to select and give a name to WLS as audio zone:

	ADD FOLDER	
tion tracks, up to	Unnamed WAVELIGHT SERVER	t your fingertips. ount
	Select an audio zone	

up to	<u>[8]</u> WLS	t you			
	U Pause all	ount			(())
	Select an audio zone			WLS	100

All set! The music on the mounted drives (internal, external, network) are now automatically indexed by Roon and ready to play.

Changing mains AC voltage compatibiliy

- a. Remove WLS top panel
- b. Locate J3 and J5 connectors from the power supply board



- c. Note the position of the installed jumpers; for 230v they start right from left of J3, J5 ; for 110v, the first pin is open.
- d. To change from 230v setting to 110v setting, translate the jumpers 1 position to the right;
- e. To change from 110v setting to 230v setting, translate the jumpers 1 position to the left.



---to be continued--