

# Azimut

Minimalist design,  
maximum connectivity

USER GUIDE



Azimut-KAMUT2L1



Azimut-KAMUT2L14



Azimut-KAMUT2V25



Azimut-KAMUT2L

**K-ARRAY**  
Unique Audio Solutions



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### IMPORTANT SAFETY INSTRUCTIONS

Read these instructions - Keep these instructions  
Heed all warnings



Warning. Failure to follow these safety instructions could result in fire, shock or other injury or damage to the device or other property.

Installation and commissioning may only be carried out by qualified and authorized personnel.



Switch-off the mains power supply before carrying out any connection or maintenance operations.

### Symbols



K-array declares that this device is in compliance with applicable CE standards and regulations. Before putting the device into operation, please observe the respective country-specific regulations!



WEEE  
Please dispose of this product at the end of its operational lifetime by bringing it to your local collection point or recycling center for such equipment.



This symbol alerts the user to the presence of recommendations about the product's use and maintenance.



The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated, dangerous voltage within the product enclosure that may be of magnitude to constitute a risk of electrical shock.



This device complies with Restriction of Hazardous Substances Directive.

### General heed and warnings

- Read these instructions.
- Keep this instructions.
- Heed all warnings.
- Follow all instructions.
- Do not use this apparatus near water.
- Clean only with dry cloth.
- Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
- Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- Only use attachments/accessories specified by the manufacturer.
- Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
- Unplug this apparatus during lightning storms or when unused for long periods of time.
- This loudspeaker system is intended for professional use.
- Beware of sound levels. Do not stay within close proximity of loudspeakers in operation. Loudspeaker systems are capable of producing very high sound pressure levels (SPL) which can instantaneously lead to permanent hearing damage. Hearing damage can also occur at moderate level with prolonged exposure to sound. Check the applicable laws and regulations relating to maximum sound levels and exposure times.
- Before connecting the loudspeakers to other devices, turn off the power for all devices.
- Before turning the power on or off for all devices, set all volume levels to minimum.
- Use only speaker cables for connecting speakers to the speaker terminals.
- Be sure to observe the amplifier's rated load impedance particularly when connecting speakers in parallel. Connecting an impedance load outside the amplifier's rated range can damage the devices.
- Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
- K-array will not shoulder any responsibilities for products modified without prior authorization.
- K-array cannot be held responsible for damage caused by improper use of the loudspeakers.



Thank you for choosing this K-array product!

To ensure proper operation, please carefully read this owner's manual and safety instruction before using the product. After reading this manual, be sure to keep it for future reference.

Should you have any questions about your new device please contact K-array customer service at [support@k-array.com](mailto:support@k-array.com) or contact the official K-array distributor in your country.

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Your new speaker has Spotify Connect built in. You need a Spotify account to take advantage of Spotify Connect.

Spotify Connect lets you control the music playing on your device, using the Spotify app on your mobile, tablet or PC. Listening is seamless. You can take calls, play games, even switch your phone off – all without interrupting the music. Learn more at [spotify.com/connect](https://spotify.com/connect)

The Spotify software is subject to third party licenses found here: [www.spotify.com/connect/third-party-licenses](https://www.spotify.com/connect/third-party-licenses)

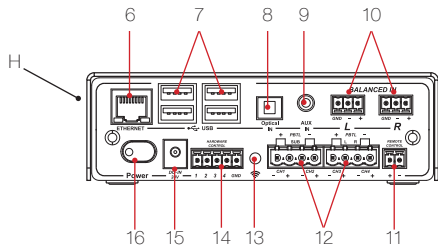
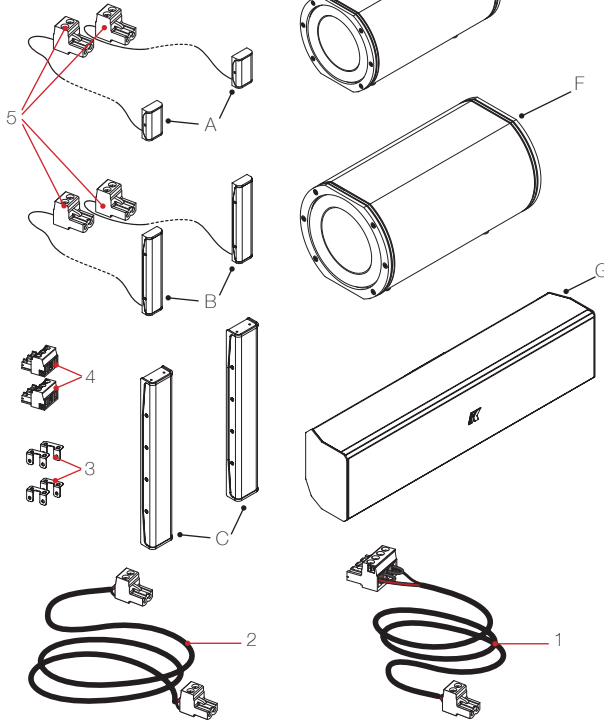
Listen out loud with Spotify Connect

1. Connect your Azimut-KA02 to your local network;
2. Open up the Spotify app on your phone, tablet or laptop using the same network;
3. Play a song and select Devices Available;
4. Select your Azimut-KA02 and start listening.

# Azimut

## User Guide

- A. **Lyzard-KZ1**
- B. **Lyzard-KZ14**
- C. **Vyper-KV25**
- D. **Truffle-KTR24**
- E. **Truffle-KTR25**
- F. **Truffle-KTR26**
- G. **Rumble-KU44-2**
- H. **Kommander-KA02**



## Unpacking

Each K-array amplifier is built to the highest standard and thoroughly inspected before leaving the factory. Upon arrival, carefully inspect the shipping carton, then examine and test your new amplifier. If you find any damage, immediately notify the shipping company. Check that the following parts are supplied with the product.

### Azimut-KAMUT2L1

- 1x Kommander-KA02 amplifier
- 1x Truffle-KTR24 subwoofer
- 2x Lyzard-KZ1 ultra miniaturized loudspeaker w/cable
- 1x Remote
- 1x Subwoofer cable
- 1x Power supply w/power cord
- 2x Line input connectors (Phoenix MC 1.5/3-G-3.81)

### Azimut-KAMUT2L14

- 1x Kommander-KA02 amplifier
- 1x Truffle-KTR25 subwoofer
- 2x Lyzard-KZ14 ultra miniaturized line-array element w/cable
- 1x Remote
- 1x Subwoofer cable
- 1x Power supply w/power cord
- 2x Line input connectors (Phoenix MC 1.5/3-G-3.81)
- 3x Adhesive magnetic strip
- 3x Double-sided removable adhesive strip

### Azimut-KAMUT2V25

- 1x Kommander-KA02 amplifier
- 1x Truffle-KTR26 subwoofer
- 2x Vyper-KV25 line-array element
- 1x Remote
- 1x Subwoofer cable
- 2x Loudspeaker cables
- 1x Power supply w/power cord
- 2x Line input connectors (Phoenix MC 1.5/3-G-3.81)
- 4x Pairs of 3M Dual Lock pads
- 4x Wall mount brackets

### Azimut-KAMUT2L

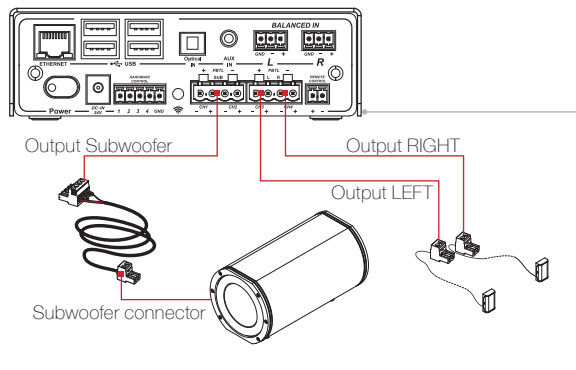
- 1x Kommander-KA02 amplifier
- 1x Rumble-KU44-2 subwoofer
- 2x Lyzard-KZ14 ultra miniaturized line-array element w/cable
- 1x Remote
- 1x Subwoofer cable
- 1x Power supply w/power cord
- 2x Line input connectors (Phoenix MC 1.5/3-G-3.81)
- 3x Adhesive magnetic strip
- 3x Double-sided removable adhesive strip

- 1. Subwoofer cable
- 2. Vyper-KV25 cable
- 3. Brackets for Vyper-KV25
- 4. Balanced connection plugs
- 5. Wired loudspeaker plugs
- 6. Ethernet Port
- 7. USB ports
- 8. Optical input
- 9. 3,5 mm jack analog input
- 10. Balanced analog inputs
- 11. Remote Control connector
- 12. Output connectors
- 13. Wi-Fi reset switch
- 14. GPIO port
- 15. DC inlet
- 16. Power switch

\* Available for Azimut-KAMUT2V25 only.

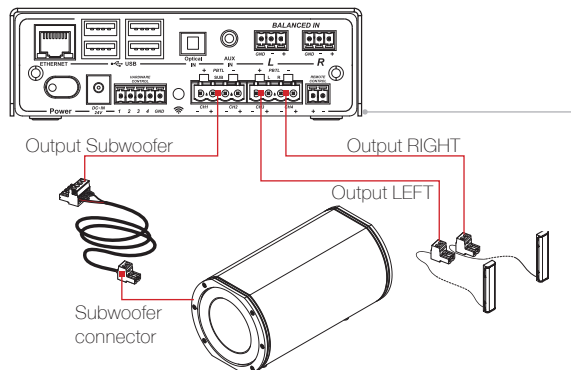
# Hardware Configuration

## Azimut-KAMUT2L1



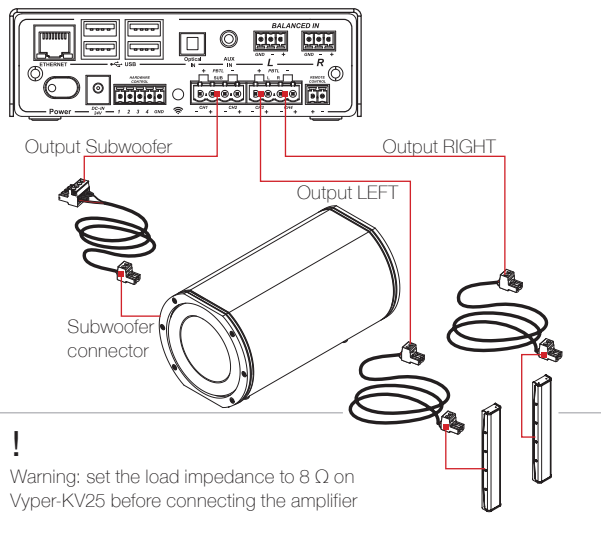
! Available optional: Lyzard-KZ1, Truffle-KTR24  
 Up to 4 Lyzard-KZ1 per channel can be connected in parallel.  
 Up to 2 Truffle-KTR24 per channel can be connected in parallel.

## Azimut-KAMUT2L14



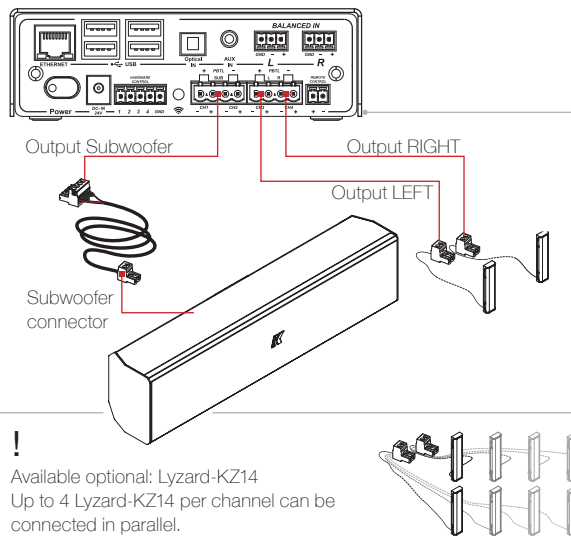
! Available optional: Lyzard-KZ14, Truffle-KTR25  
 Up to 4 Lyzard-KZ14 per channel can be connected in parallel.  
 Up to 2 Truffle-KTR25 per channel can be connected in parallel.

## Azimut-KAMUT2V25



! Warning: set the load impedance to 8 Ω on Vyper-KV25 before connecting the amplifier

## Azimut-KAMUT2L



! Available optional: Lyzard-KZ14  
 Up to 4 Lyzard-KZ14 per channel can be connected in parallel.

## Loudspeaker Wirings

Cables with proper terminal connectors are provided within the package: follow the hardware configuration section for setting the connections.

### Lyzard wirings

Lyzard loudspeakers are already pre-wired with 5 m (16.4 ft) of ultra-thin speaker cable to be directly connected to the K-array Kommander-KA02 power amplifier.

Before connecting the loudspeaker cable to the amplifier:

- insure the amplifier's minimum loading impedance is matched, especially when connecting multiple loudspeakers in parallel (see next paragraph);
- insure that the amplifier is switched off.



The Lyzard's ultra-thin speaker cable **should not be cut, jointed or soldered.** Instead of altering the wiring, replace the cable.

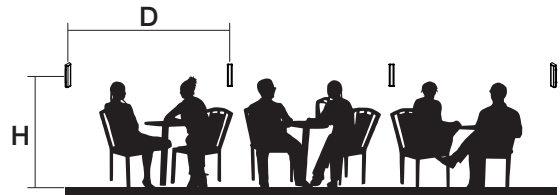
In case of cable replacement, for a cable run of up to 5 m (16.4 ft) use wire gauge of 0,5 mm<sup>2</sup> (24 AWG) at least. For longer cable runs a wider gauge is recommended.

In order to screw the terminals of the Lyzard loudspeakers, use 2 mm (5/64 in) standard (flat-blade) screwdriver.

## Setup

Lyzard and Vyper loudspeakers perform best when positioned on a planar surface such as a wall.

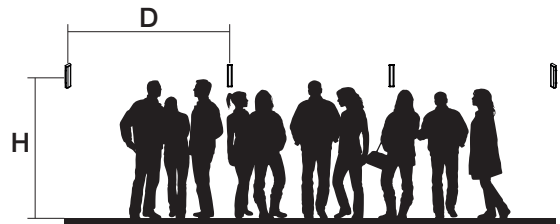
Find the proper installation height, aiming the loudspeaker at the listening position. We suggest the following configurations:



Sitting people

H: min height 1,5 m (5 ft) / max height 2,5 m (8¼ ft)

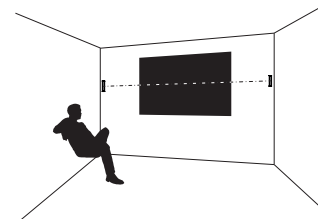
D: min distance: 2,5 m (8¼ ft)



Standing people

H: min height 1,7 m (5½ ft) / max height 2,7 m (9 ft)

D: min distance: 2,5 m (8¼ ft)



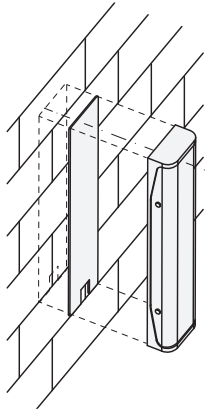
TV screens or displays



## Installation

### Adhesive strips and Dual Lock pads

The adhesive strips and Dual Lock pads are intended for quick and clean installation on flat surfaces, being ready to use for either fixed and temporary installations.

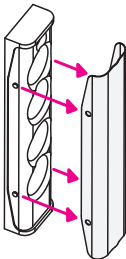


### Permanent installation, wall plug

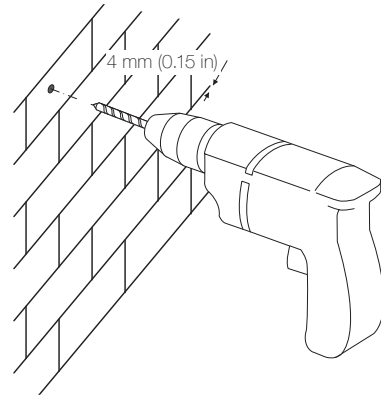
For permanent installation a kit including a proper screw and plug is provided.

Follow these operating instructions:

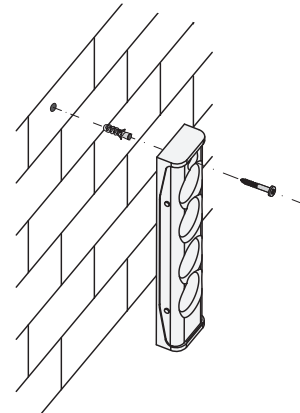
1. Before permanently affixing the loudspeaker to the surface, gently remove the outer grill;



2. Drill a 4 mm (0.15 in) diameter hole in the surface with a depth of at least 20 mm (0.80 in);



3. Set the wall plug in place and gently screw the loudspeaker to the surface;



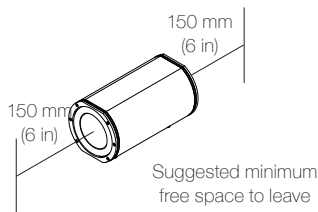
4. Reposition the outer grill on the loudspeaker.

# Azimut

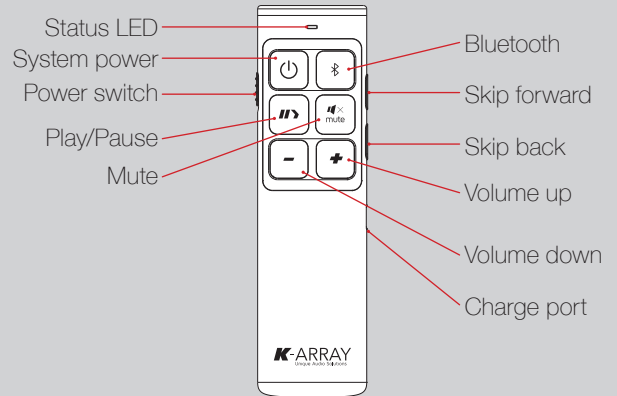
## User Guide

### Subwoofer

Truffle subwoofer are designed to be easy to conceal on top or bottom of the furnitures. Insure to leave enough free space all around the subwoofer in order to let the sound propagate properly.



### Wireless Remote



The wireless remote provides complete control over the Azimut playback features.

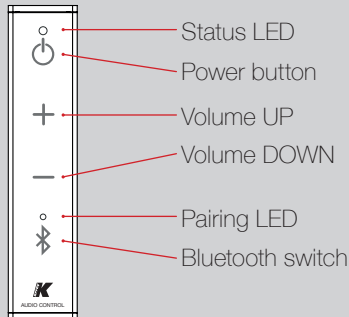
The remote includes a high efficiency rechargeable battery: a switch allows to power off the remote in order to extend the battery life.

When the battery discharges to approximately 10% remaining life, the LED on the remote starts flashing: connect the remote's charge port to a standard USB port to recharge the internal battery; use the provided cable.

	Command		Battery low
	received	not received	
Status LED	single blink	long blinking	flashing

Bluetooth pairing	Press the bluetooth button to set the Azimut to Bluetooth pairing mode
-------------------	--

## Wired Remote



	Standby	Power On
Status LED	Pulse Blinking	Solid White
Bluetooth pairing	Keep pressed for 10 seconds the bluetooth button to set the Azimut to Bluetooth pairing mode	

The Azimut system can be completely controlled by any mobile device or desktop PC via the Azimut Control Interface. We strongly suggest to implement the Azimut system within your network environment and then access its features relying on your wireless access point or wired devices.

Bluetooth Connectivity is dedicated to direct streaming from any mobile device supporting the Bluetooth 4.1 protocol.



## Remote Connectivity

Name and password for accessing the **Azimut Control Interface** are collected on a label underneath the Kommander-KA02 amplifier.

Default IP: 192.168.10.1

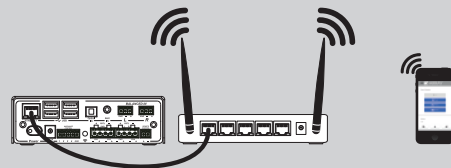
Default password: 12345678

### Azimut Discovery app

Download the Azimut Discovery App for your device:



Connect the Azimut to your Wi-Fi access point via a dedicated Ethernet cable.



Use the Azimut Discovery app to discover and direct access the Azimut Control Interface within your Wi-Fi network.

### Bluetooth pairing

Set the system waiting for pairing with your bluetooth device either pressing the dedicated button on the remote, or using the Azimut Control Interface

Bluetooth pairing can be achieved by the Network & Bluetooth section in the A as well. See the Network & Bluetooth for more details.

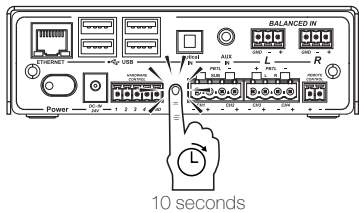
# Azimut

## User Guide

### Reset Network Parameters

With the system on, keep pressed for 10 seconds the network reset button on the rear panel to revert the network parameters to the default factory settings.

The network addressing mode reverts to DHCP and the default Wi-Fi IP address and password are restored.



### Azimut Control Interface

Main menu

Source Selection

- BT
- Player
- Analog
- Optical

Volume

0.35 dB

Player

- USB
- Web Radio
- Spotify

Tracks

Number	Track
1	usb/01 Life Itself.m4a
2	usb/02 Youth.m4a
3	usb/03 Season 2 Episode 3.m4a

Autostart at boot    Autostart on connect

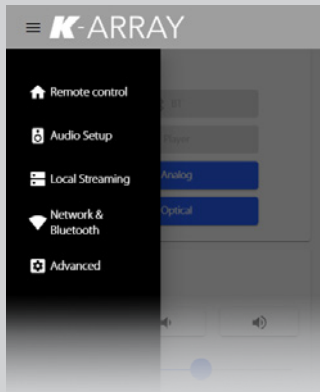
Audio sources  
Blue buttons highlight active inputs

Player controls change according to the player selected

USB tracks list

Startup options

### Main menu



#### Remote control

The default view with Audio sources and Players selections.

#### Audio Setup

User equalizer and level tuning.

#### Local Streaming

Manage a group of devices by a single Azimut system.

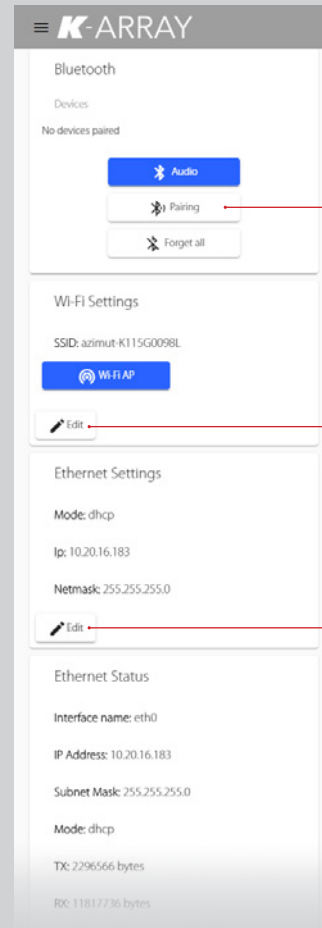
#### Network & Bluetooth

Modify network and Bluetooth settings.

#### Advanced

Set advanced features.

### Network & Bluetooth



#### Pairing

Click this button to set the system in Pairing mode waiting for a connection.

#### Edit Password

Click this button to set a new password for the local Wi-Fi of the Azimut system

#### Edit Ethernet

Click this button to change Ethernet settings (i.e. a static IP address and a different netmask)

### Local streaming

**K-ARRAY**

Local Streaming Setup

Device **Main hall**

Slave

Master  Master  
This device will stream audio to any Slave system in the network

Standby

Level  -9 dB

Device **Room 1**

Slave

Master

Standby

Level  -15 dB

Device **Room 2**

Slave  Free  
This device will playback audio from local sources or internet independently.

Master

Standby

Level  +6 dB

Device **Reception**

Slave

Master

Standby

Level  -6 dB

Device **Restaurant**

Slave  Slave  
This device will playback the same audio played by the Master Azimut system

Master

Standby

Level  -28 dB

Device **Balcony 1**

Slave

Master

Standby

Level  -9 dB

Device **Balcony 2**

This feature allows to manage a group of Kommander-KA02 Azimut amplifiers by a single Azimut system.

#### Preliminary setup:

- Connect all the Kommander-KA02 to the same network;
- Set a unique name on each device in order to ease its detection and setup (see Advanced section for details);
- Select one Azimut system as Master device on the network: this device will stream its music to any other Azimut system marked as Slave.

#### Local streaming setup:

1. Connect to one Azimut system and access its Azimut Control Interface;
2. Browse the Main menu and click on Local streaming: the view will show the complete list of the Azimut systems within the network of the Azimut you are connected to;
3. For each listed Azimut system you can:
  - set it as Master: this device will stream the music to any other Slave Azimut system in the network.  
**WARNING: only one Master device is allowed within the network**
  - set it as Slave: this device will playback the music streamed by the Master;
  - toggle the standby mode in order to wake up or turn off the system (resume or stop playback accordingly);
  - set the playback volume.

By accessing the Azimut Control Interface of an Azimut system within the network it is possible to override the Local streaming setting and free the device.

### Advanced settings

**K-ARRAY**

System

Name: My Azimut

Serial Number: K115G0333H

Country Code: IT

Board Model: 3b+

Standby

Reboot

Demo

Factory reset

Version Info

System Firmware

Current Version: 1.0.4.1

Latest Version: 1.0.4.1

Download

Install

Install via USB

App

Current Version: 1.0.5.0

Latest Version: 1.0.4.1

Audio Firmware

Hardware Control Setup

Automatic Standby Configuration

Output Configuration

### SYSTEM UPDATE

The Kommander-KA02 Azimut amplifier can be easily updated in the Advanced settings view.

1. Connect to the Azimut system and access its Azimut Control Interface;
2. Browse the **Main menu** and click on **Advanced**;
3. Expand the **Version Info** section: if the Azimut system is connected to Internet, the system will look for updates on K-array website. When a new firmware version is available, the **Download** button lights on.
4. Click on the **Download** button and wait for the firmware update file to be saved on-board.
5. When the **Install** button lights on: click on the Install button to start the system update.

Do not reboot the system until the alert message appears. During firmware update, please don't modify any parameter of the device on the web interface.

### UPDATE VIA USB

1. Download the firmware packages from the Azimut support webpage in [www.k-array.com](http://www.k-array.com);
2. Format the USB memory stick with FAT16 or FAT32 file system;
3. Create a folder named "update" (case sensitive) in the root of the USB memory stick;
4. Copy the firmware packages marked as "update" into the update folder: files must follow the correct naming pattern, and both .package and .package.sha256 files must be present into the folder:

```
| -update\  
|   |-rootfs-update-1.0.5.0.package  
|   |-rootfs-update-1.0.5.0.package.sha256
```

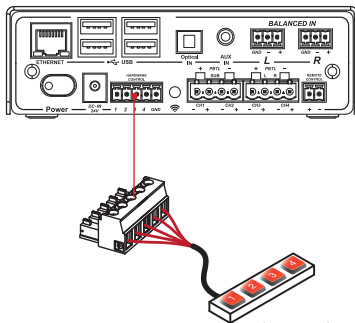
5. Connect the USB memory to the Azimut;
6. Connect to the Azimut system and access its Azimut Control Interface;
7. Browse the **Main menu** and click on **Advanced**;
8. Expand the **Version Info** section;
9. Click on the **Install via USB** button.

### Hardware control setup

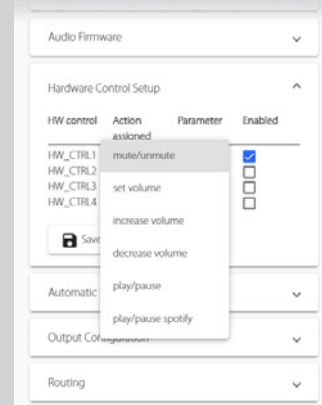
The Kommander-KA02 Azimut amplifier provides a General Purpose Input connector designed to connect up to four external normally open (NO) switches\* to be set as a further remote user customizable controls.

In order to bind the remote control to an Azimut operating functionality (actions) follow these step:

1. Connect the external NO switch to the ground (GND) terminal and to one of the four available terminals of the flying plug;
2. Plug the flying plug to the Hardware Control port on the Kommander-KA02 back panel;
3. Open the Azimut user interface, click on the Main Menu icon and select Advanced;
4. Scroll down and find the Hardware Control section;
5. Find the control with the number corresponding to the hardware control terminal where you plugged the remote switch and set the proper action;
6. Enable the remote control;
7. Click on Save setup to make the settings effective.



\*external normally open (NO) switches are not provided with the Azimut system.



Actions
mute/unmute
set volume (max: +12, min: -90)
Increase volume
Decrease volume
play/pause
play/pause Spotify



Output Configuration

Linked	Channel	Speaker	Match
	OUT CH 1	KJ44-2	KZ14m...
	OUT CH 2	KJ44-2	KZ14m...
	OUT CH 3	KZ14m...	KJ44-2
	OUT CH 4	KZ14m...	KJ44-2

channel1  channel2

channel3  channel4

Stored Output configurations

Output configuration name

Routing

Output Configuration

Routing

Channel	Left	Right
OUT CH 1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
OUT CH 2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
OUT CH 3	<input checked="" type="checkbox"/>	<input type="checkbox"/>
OUT CH 4	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### Output configuration

This view allows to modify the loudspeaker assignment to the Kommander-KA02 amplifier output channels.

**These configuration shall be set by authorized operators.**

**WARNING: wrong loudspeaker selection may seriously damage connected loudspeakers.**

### Routing

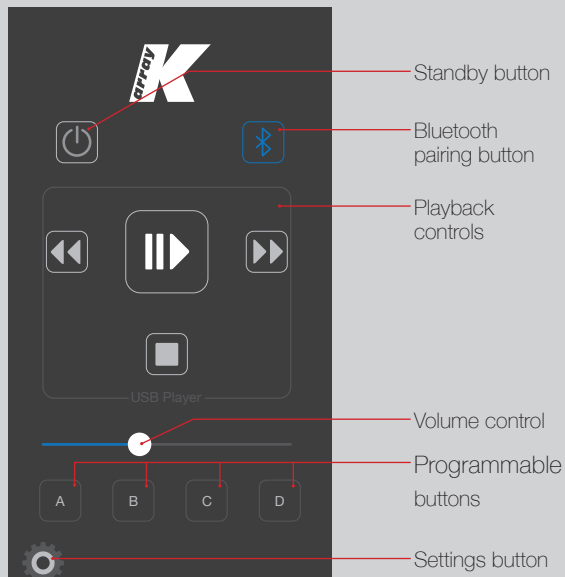
This view allows to modify the LEFT and RIGHT input channel assignment to the Kommander-KA02 amplifier output channels.

### Azimut Remote App

Azimut Remote is a iOS application that allows the user to remotely control a single Kommander-KA02 amplifier unit via an Ethernet connection.

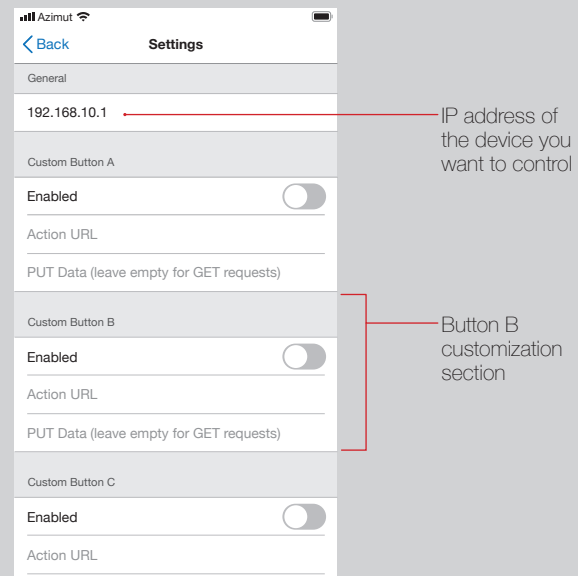


Azimut Remote offers an easy to use interface for managing audio playback and Bluetooth pairing, as well as four fully user programmable buttons.



In order to connect the Azimut Remote to the Azimut system:

1. Be sure that the Azimut system and your iOS device are connected to the same network.
2. Launch the Azimut Discovery application (see [Azimut Remote App, p. 16](#)). The app will show the discovered Azimut Systems on the network: make note of the IP address of the device you want to control with the Azimut Remote app.
3. Launch the Azimut Remote app and open the Settings view.
4. Insert the IP address of the device you want to control in the General field on top of the page.
5. Click on Back: the app is now linked to your Azimut System



In order to customize the action associated to the four programmable buttons:

1. Select the button you want to program and set the proper action among the one listed in the table below.
2. Some actions require you to define the argument of the setting (e.g. the volume) in the PUT Data field. If not required, leave this field empty.
3. Enable the button to make it active.

You can eventually control a different device within the network setting preceding the action string with the IP address of the target device; e.g. pause playback of the device with IP 192.168.10.100:

`http://192.168.10.100/api/v1/player/pause`

Description	Action	PUT data
Mute ON	<code>/api/v1/dsp/main/mute</code>	<code>{"mute": true }</code>
Mute OFF	<code>/api/v1/dsp/main/mute</code>	<code>{"mute": false }</code>
Set volume at value # (span from -90 to 12)	<code>/api/v1/dsp/main/volume</code>	<code>{"volume": # }</code>
Volume UP	<code>/api/v1/dsp/main/volume/up</code>	<code>{}</code>
Volume DOWN	<code>/api/v1/dsp/main/volume/up</code>	<code>{}</code>
Start playback	<code>/api/v1/player/play</code>	
Pause playback	<code>/api/v1/player/pause</code>	
Skip backward	<code>/api/v1/player/prev</code>	
Skip forward	<code>/api/v1/player/next</code>	
Set standby ON	<code>/api/v1/tas/standby</code>	<code>{"mute": true }</code>
Set standby OFF	<code>/api/v1/tas/standby</code>	<code>{"mute": false }</code>
Set the device as SLAVE in a local streaming network	<code>/api/v1/multiroom/slave</code>	<code>{"slave": true }</code>
Release the device from the local streaming network	<code>/api/v1/multiroom/slave</code>	<code>{"slave": false }</code>
Set the device as MASTER in a local streaming network	<code>/api/v1/multiroom/master</code>	<code>{"master": true }</code>
Release the local streaming network	<code>/api/v1/multiroom/master</code>	<code>{"master": false }</code>

Custom Button A

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Enabled

---

`/api/v1/tas/standby`

---

`{"mute": true }`

---

Custom Button B

## Technical Specifications

	Lyizard-KZ1	Lyizard-KZ14	Vyper-KV25
Type	Point source	Line array	Line array
Rated Power	3.5 W	15 W	75 W
Frequency Response	500 Hz – 18 kHz (-6 dB) <sup>1</sup>	500 Hz – 18 kHz (-6 dB) <sup>1</sup>	150 Hz – 18 kHz (-6 dB) <sup>1</sup>
Maximum SPL	86 dB (peak) <sup>2</sup>	98 dB (peak) <sup>3</sup>	108 dB (peak) <sup>3</sup>
Coverage	V. 140°   H. 140°	V. 40°   H. 140°	V. 25°   H. 120°
Transducers	0,5" neodymium magnet woofer	4x 0,5" neodymium magnet woofers	4x 1" neodymium magnet woofers
Colors	Black, white, custom RAL		
Finishes	Polished stainless steel, 24K gold finishes		Brushed and polished stainless steel, 24K gold finishes
Material	Aluminum		
Dimensions (WxHxD)	22 x 37 x 11 mm (0.9 x 1.5 x 0.4 in)	22 x 100 x 11 mm (0.9 x 3.9 x 0.4 in)	40 x 260 x 22 mm (1.6 x 10.2 x 0.9 in)
Weight	0.021 kg (0.046 lb)	0,059 kg (0.130 lb)	0,4 kg (0.88 lb)
IP Rating	IP64		
Impedance	16 Ω	16 Ω	8 Ω / 32 Ω selectable

<sup>1</sup> With dedicated preset.

<sup>2</sup> Maximum SPL is calculated using a signal with crest factor 4 (12dB) measured at 1 m.

<sup>3</sup> Maximum SPL is calculated using a signal with crest factor 4 (12dB) measured at 8 m then scaled at 1 m.

	Truffle-KTR24	Truffle-KTR25	Truffle-KTR26	Rumble-KU44-2
Type	Point source	Point source	Point source	Point source
Rated Power	60 W	80 W	100 W	120 W
Frequency Response	45 Hz – 150 Hz (-6 dB) <sup>1</sup>	45 Hz – 150 Hz (-6 dB) <sup>1</sup>	45 Hz – 150 Hz (-6 dB) <sup>1</sup>	50 Hz – 150 Hz (-6 dB) <sup>1</sup>
Maximum SPL	112 dB (peak) <sup>2</sup>	115 dB (peak) <sup>2</sup>	120 dB (peak) <sup>2</sup>	116 dB (peak) <sup>2</sup>
Coverage	Omni	Omni	Omni	Omni
Transducers	4" woofer + passive radiator	5.25" woofer + passive radiator	6.5" woofer + passive radiator	2 x 4" neodymium magnet 2 x 4" passive transducer
Colors	Black			Black, white, Custom RAL
Finishes	Powder Matte			Gold, Polished, Brushed
Material	Aluminum			Stainless Steel
Dimensions (WxHxD)	122 x 117 x 199 mm (4.8 x 4.6 x 7.8 in)	152 x 147 x 258 mm (6.0 x 5.8 x 10.2 in)	182 x 176 x 341 mm (7.1 x 6.9 x 13.4 in)	500 x 116 x 100 mm <sup>3</sup> (19.7 x 4.6 x 4.0 in)
Weight	1,5 kg (3.31 lb)	2,5 kg (5.51 lb)	3,5 kg (7.72 lb)	5,9 kg (13.0 lb)
IP Rating	IP64			IP64
Impedance	4 Ω	4 Ω	2 Ω	2 Ω

<sup>1</sup> With dedicated preset.

<sup>2</sup> Maximum SPL is calculated using a signal with crest factor 4 (12dB) measured at 1 m.

<sup>3</sup> Removable rubber feet not included.

	Kommander-KA02	
Type	4-channel Class D audio amplifier	
Rated Power	4x 50W @ 4Ω	
Frequency Response	20 Hz – 20 kHz (±1 dB)	
Connectivity	Bluetooth 4.1 Low Energy, Wi-Fi, Ethernet	2x Phoenix Connectors (bal) 3.5 mm Jack Stereo (unbal) Toslink Optical Connector
Control	Dedicated Azimut Control Interface / wired Remote Control	
Operating range	Dedicated AC/DC power adapter 100-240V ~ AC, 50-60 Hz input / 24 V, 4A DC output	
Colors and Finishes	Black / Powder Matte	
Material	Aluminum	
Dimensions (WxHxD)	144 x 46 x 144 mm (5.6 x 1.8 x 5.6 in)	
Weight	0,5 kg (11 lb)	
Load impedance	minimum 4 Ω	







**Designed and Made in Italy**

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