

# LINA Network DAC

## Getting Started Guide

LINA

# View the full User Guide



To view the full User Guide for your LINA Network DAC, visit <https://dcsaudio.com/documentation>

## Document information

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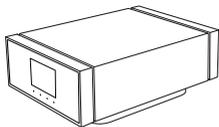
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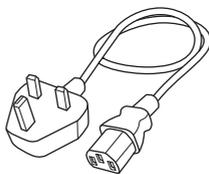
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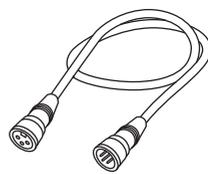
# What's in the box



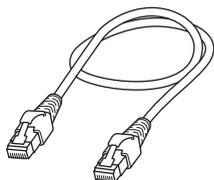
dCS LINA Network DAC



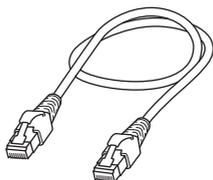
Power cable (2m)



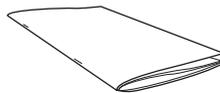
2x XLR cable (0.5m)



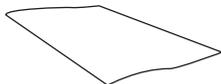
Ethernet cable (2m)



Power Link cable  
(0.5m)



Getting Started Guide



Spotify flyer

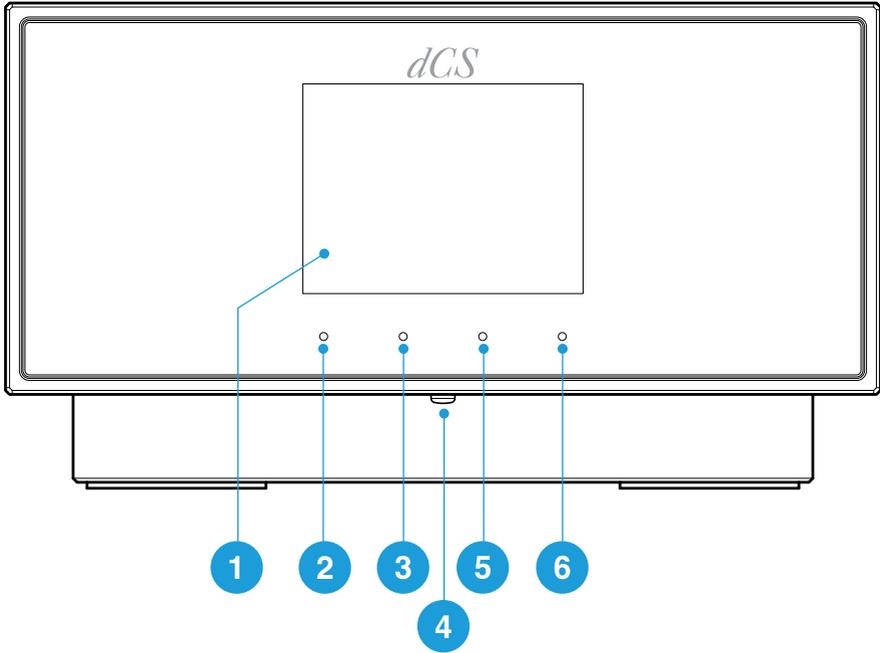


Welcome letter



Display cleaning cloth

# Front



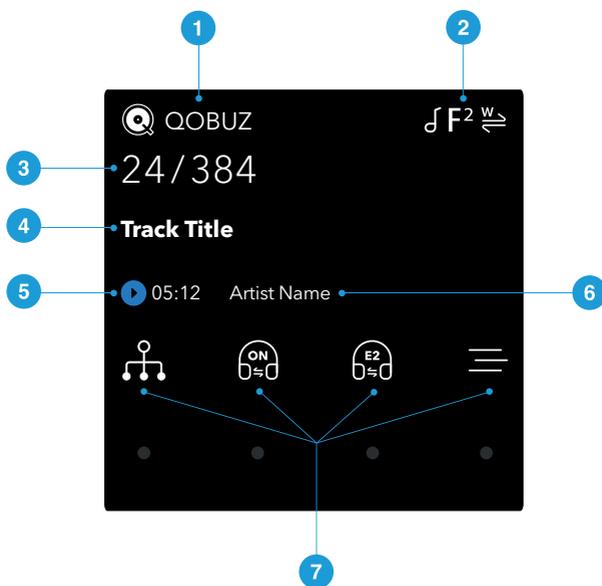
Item	Description
1	Display Displays menus and information about the current input, for example, track name and artist.
2	Touch button Tap to select the option shown in the display above the button. <ul style="list-style-type: none"><li>• On the home screen, tap to use the assigned shortcut.</li><li>• In a menu, tap to move up a level or exit the menu.</li></ul>
3	Touch button Tap to select the option shown in the display above the button. <ul style="list-style-type: none"><li>• On the home screen, tap to use the assigned shortcut.</li><li>• In a menu, tap to go to the previous page.</li></ul>

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Item	Description
4 Power button	To switch on or enter sleep mode, press briefly. To switch off, press and hold until <b>POWER OFF</b> is displayed.
5 Touch button	Tap to select the option shown in the display above the button. <ul style="list-style-type: none"><li>• On the home screen, tap to use the assigned shortcut.</li><li>• In a menu, tap to go to the next page.</li></ul>
6 Touch button	Tap to select the option shown in the display above the button. <ul style="list-style-type: none"><li>• On the home screen, tap to open the main menu. Touch and hold to change the function of the three shortcut buttons.<ul style="list-style-type: none"><li>▶ <i>For more information, see "Changing the shortcut buttons" on page 22.</i></li></ul></li><li>• In a menu, tap to select a menu item or change a setting.</li></ul>

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# Display



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## Description

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1 Input source

2 Status icons

► *For more information, see "Status icons" on the facing page.*

3 Data rate (word length and sample rate for PCM, or DSD or DSDx2)

4 Track title\*

5 Play/Pause icon and track elapsed time\*

6 Artist name\*

7 Menu, settings and shortcuts. To select the option, tap the relevant touch button.

If an option is not available, the icon is greyed out.

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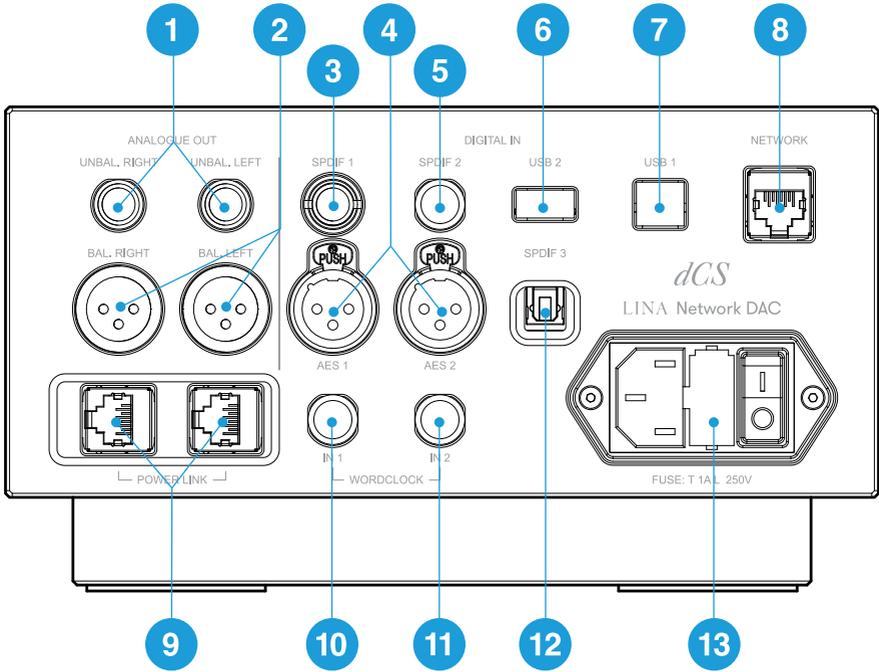
\*Displayed only when streaming from network or USB2

# Status icons

Status icons are shown in the top-right of the home screen.

Icon	Description
<b>F1</b>	Filter setting when receiving PCM data
<b>F1</b> <small>DSD</small>	Filter setting when receiving DSD data
<b>M</b> ↔	Clocking sync mode: Master
<b>A</b> ↔	Clocking sync mode: Audio
<b>W</b> ↔ / <b>W1</b> ↔ / <b>W2</b> ↔	Clocking sync mode: Word Clock (Auto, 1 or 2)
♩	Phase is normal
∩	Phase is inverted

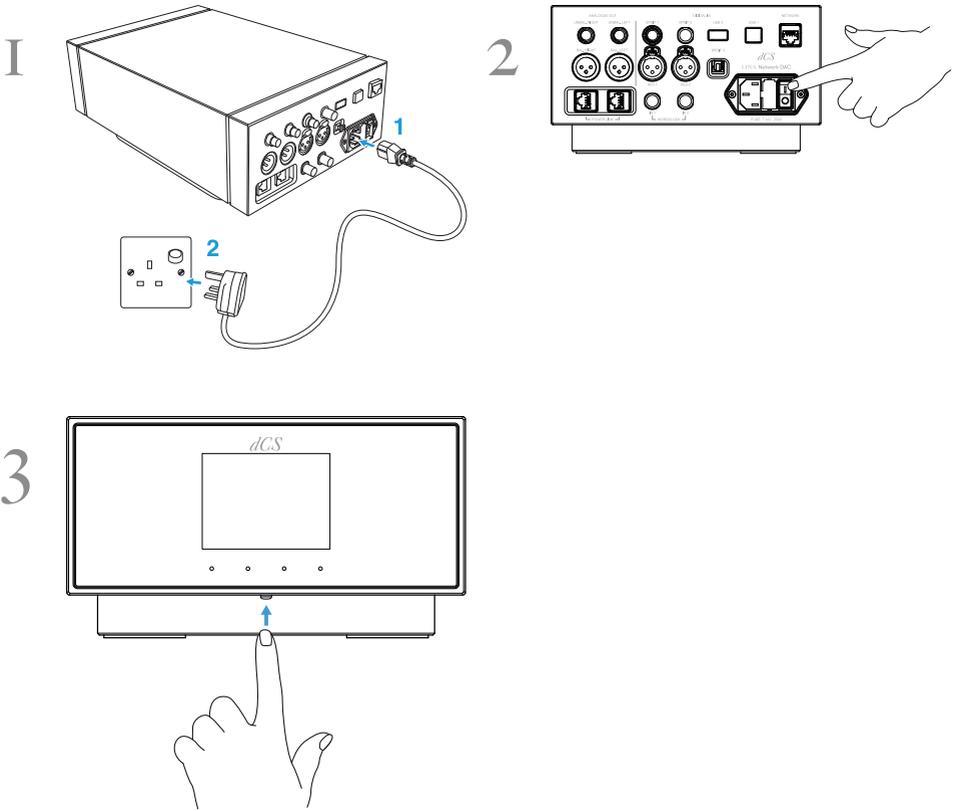
# Rear



Item	Description
1	<i>UNBAL. LEFT</i> <i>UNBAL. RIGHT</i> Stereo unbalanced RCA analogue outputs. Connects the unit to an integrated amplifier or preamplifier.
2	<i>BAL. LEFT</i> <i>BAL. RIGHT</i> Stereo balanced XLR analogue outputs. Connects the unit to an integrated amplifier or preamplifier.
3	<i>SPDIF 1</i> RCA digital input. Connects the unit to a digital audio source.
4	<i>AES 1</i> <i>AES 2</i> XLR digital inputs. Connects the unit to a digital audio source, such as a CD transport or upsampler.

Item		Description
5	<i>SPDIF 2</i>	BNC digital input. Connects the unit to a digital audio source, such as a CD transport or upsampler.
6	<i>USB 2</i>	USB-A digital input. Connects the unit to a USB flash drive.
7	<i>USB 1</i>	USB-B digital input. Connects the unit to a computer or sound server.
8	<i>NETWORK</i>	RJ45 network input. Connects the unit to the local network or the Internet.
9	<i>POWER LINK</i>	RJ45 input. Connects the unit to other LINA units to enable Power Link.
10	<i>WORDCLOCK IN 1</i>	Word clock input 1. A 75 $\Omega$ BNC connector. Connects the unit to an external clock. Word clock is only used for synchronisation and does not carry digital audio data.
11	<i>WORDCLOCK IN 2</i>	Word clock input 2. A 75 $\Omega$ BNC connector. Connects the unit to an external clock. Word clock is only used for synchronisation and does not carry digital audio data.
12	<i>SPDIF 3</i>	Fibre optic Toslink input. Connects the unit to a digital audio source, such as a satellite receiver.
13	Power socket, fuse, and power switch	Power is connected via a standard IEC320 connector, with a power switch and a fuse holder.

# Setting up



## Connecting the LINA range

To connect the LINA Network DAC, LINA Master Clock and LINA Headphone Amplifier together:

1. Position the LINA range.
2. Connect the LINA Network DAC to the LINA Headphone Amplifier.
3. Connect the LINA Master Clock to the LINA Network DAC.

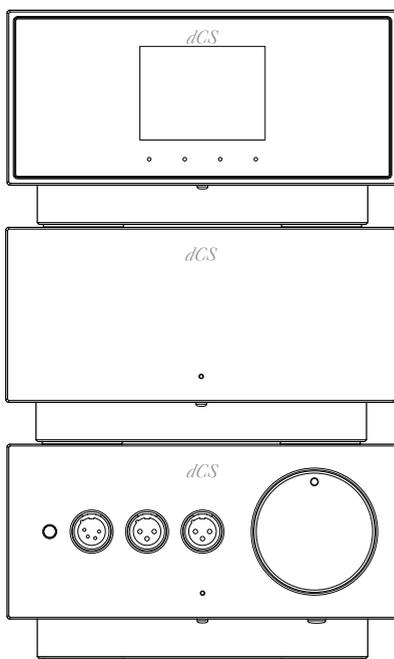
## I. Positioning the LINA range

You can position the units in one of the following ways:

- Place the units side by side.
- Stack the units vertically in the following order:
  - LINA Headphone Amplifier at the bottom
  - LINA Master Clock in the middle
  - LINA Network DAC on top



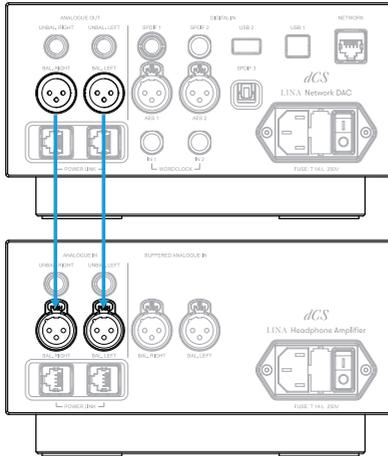
To prevent overheating, we recommend that you leave some space around the units to allow for ventilation.



## 2. Connecting the LINA Network DAC to the LINA Headphone Amplifier

You can connect the LINA Network DAC to the LINA Headphone Amplifier using the balanced XLR sockets.

1. Using two balanced XLR cables, connect the *BAL. LEFT* and *BAL. RIGHT* outputs on the LINA Network DAC to the *BAL. LEFT* and *BAL. RIGHT* inputs on the LINA Headphone Amplifier.



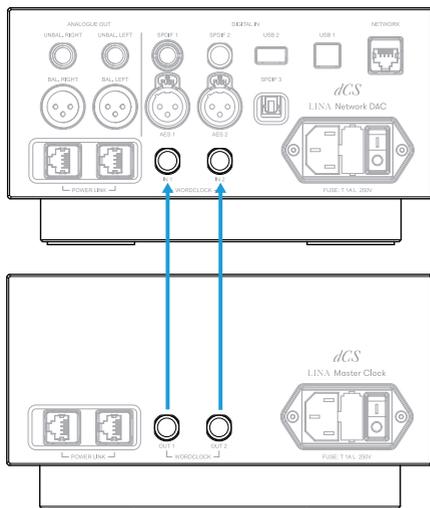
2. On the LINA Headphone Amplifier, choose the unbuffered XLR input. If the status indicator is not white, press the *Power / Input* button until it changes to white.

## 3. Connecting the LINA Master Clock to the LINA Network DAC

You can lock the network and USB inputs on the LINA Network DAC to the LINA Master Clock.

1. Switch on the LINA Network DAC and the LINA Master Clock.
2. On the LINA Network DAC, choose the network or USB input.
  - *For more information, see "Changing the source input" on page 22.*

- Using two BNC cables, connect the *WORDCLOCK* output sockets on the LINA Master Clock to the *WORDCLOCK* input sockets on the LINA Network DAC.



- Set the clocking sync mode on the LINA Network DAC to Auto . The LINA Network DAC selects the appropriate clock input and locks to it.



If you lock an AES or SPDIF input on the LINA Network DAC to the LINA Master Clock, the source equipment will not be locked to the Clock, resulting in periodic clicks, dropouts or distortion.

To use the LINA Network DAC in this way, use source equipment that has a word clock input and a Master Clock with extra outputs.

## Connecting audio source equipment

You can use the input sockets on the rear of the LINA Network DAC to connect audio equipment to the unit, for example, CD transports, DVD players, or upsamplers.

There are two types of input sockets on the unit:

- AES (Audio Engineering Society)
- SPDIF (Sony/Philips Digital Interface)



If you lock an AES or SPDIF input on the LINA Network DAC to the LINA Master Clock, the source equipment will not be locked to the Clock, resulting in periodic clicks, dropouts or distortion.

To use the LINA Network DAC in this way, use source equipment that has a word clock input and a Master Clock with extra outputs.

## Connecting a single AES or SPDIF input

Most digital audio source equipment is fitted with at least one digital output, which is usually an RCA phono connector. Satellite receivers usually have a Toslink optical output.

1. At the rear of the LINA Network DAC, connect a suitable cable to one of the following sockets:
  - AES 1
  - AES 2
  - SPDIF 1
  - SPDIF 2
  - SPDIF 3
2. Connect the other end of the cable to the source equipment.
3. Switch on the source equipment.
4. If possible, play music on the source equipment to generate an audio signal.
5. Change the source input on the unit.
  - ▶ *For more information, see "Changing the source input" on page 22.*

After you have selected the input, the display shows the bit rate and format of the current music.

## Connecting a Dual AES input

Some audio equipment, for example, upsamplers or sound servers, can output in Dual AES. Dual AES features lower jitter than single AES or SPDIF.



Some audio equipment has two single AES outputs that carry identical data. This is not the same as Dual AES, and will not give a good stereo image if you set Dual AES mode manually. To avoid this, we recommend using the Auto setting for Dual AES.

1. Using XLR cables, connect your LINA Network DAC to the source equipment. Ensure the cables are not swapped.
  - Connect the AES1 (or AES A) output on the source equipment to the *AES 1* socket on the unit.
  - Connect the AES2 (or AES B) output on the source equipment to the *AES 2* socket on the unit.
2. Switch on the source equipment.
3. If possible, play music on the source equipment to generate an audio signal.
4. Ensure that Dual AES is enabled on the unit.
5. Change the source input on the unit to **DUAL AES**.
  - ▶ *For more information, see "Changing the source input" on page 22.*

After you have selected the input, the display shows the bit rate and format of the current music.

## Connecting integrated amplifiers and preamplifiers

You can connect your LINA Network DAC to integrated amplifiers and preamplifiers. The unit has two types of analogue output connections: balanced and unbalanced. These outputs are independent, which allows you to connect each output to a different amplifier.



Connecting the unit's balanced output to an unbalanced input using an XLR cable is not recommended, as it results in hissing noises, unstable levels, and a thin sound.

1. Switch on the amplifier and set it to a low volume.
2. Connect cables to the rear of the unit.
  - If you are using the balanced outputs, connect XLR cables to the *BAL. LEFT* and *BAL. RIGHT* sockets.
  - If you are using the unbalanced outputs, connect RCA phono cables to the *UNBAL. LEFT* and *UNBAL. RIGHT* sockets.
3. Connect the other end of the cables to the amplifier.
  -  The inputs on the amplifier may be labelled CD or AUX.
4. Select the chosen input on the amplifier and play some music.
  - ▶ *For more information, see "Using the LINA Network DAC" on page 22.*
5. While music is playing, slowly increase the amplifier volume to the desired level.

## Connecting to your network

If you connect your LINA Network DAC to a network, you can stream content from local sources, such as a music server on your network, or from Internet services.

Before connecting the unit to your network, ensure you have the following items:

- A Wi-Fi network router with spare Ethernet sockets. To stream content from internet services, your router must be connected to the Internet.
- A mobile device with the Mosaic Control app installed.
  - ▶ *For more information, see "dCS Mosaic" on page 21.*
- Optional: A music server, such as a Network Attached Storage (NAS) server. The music server must be UPnP (Universal Plug and Play) compatible, and must be connected to the router via an Ethernet cable.

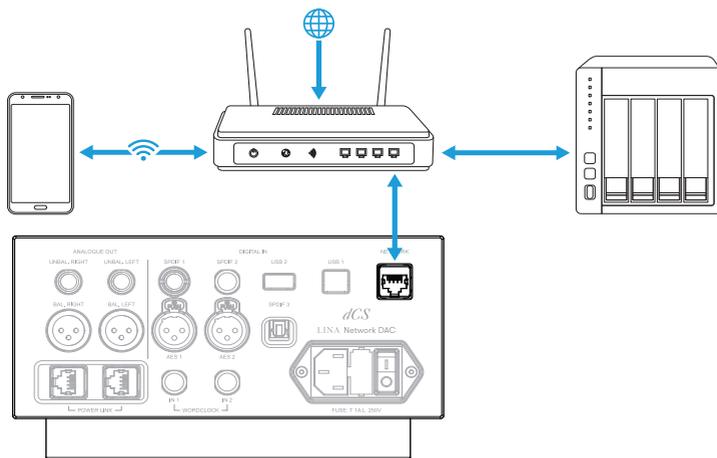
We fully test our products with the MinimServer UPnP server software. For more information about MinimServer, visit [www.minimserver.com](http://www.minimserver.com)



For more information about configuring your network, contact your local service centre or a local IT expert.

To connect your LINA Network DAC to your network:

1. At the rear of the unit, connect an Ethernet cable to the **NETWORK** socket.
2. Connect the other end of the Ethernet cable to your router.
3. On your mobile device, connect to the same network as your router.
4. On your mobile device, open the Mosaic Control app and connect to your LINA Network DAC.
5. To stream from internet services, your router must be connected to the internet.



## Connecting a computer

You can connect a computer to the *USB 1* socket on your LINA Network DAC. For best results, we recommend using a premium music streaming program instead of software included with the operating system.

1. Using a USB cable, connect a computer to the *USB 1* socket on the rear of the unit.
2. Change the source input on the unit to **USB / PC**.
  - ▶ *For more information, see "Changing the source input" on page 22.*
3. In your streaming program, select the LINA Network DAC as the output device.

## Clocking

Clock jitter is variation in the digital audio clock frequency, which can cause a loss of fine detail when listening to music. The unit can run in different clocking sync modes, which can reduce jitter. To minimise

jitter, connect the unit to the LINA Master Clock or a compatible Master Clock.

► For more information, see "Connecting the LINA range" on page 10.

ClOCKING sync mode	Inputs	Description
Master (M)	Network and USB	The unit uses its internal clock to control data delivery from the network, computer or flash drive.
Audio (A)	AES and SPDIF	The unit locks to the data stream from the source equipment.
Word Clock • Auto (W)	Network and USB	The unit locks to a Master Clock and controls data delivery from the network, computer or flash drive.
• 1 (W <sub>1</sub> ) • 2 (W <sub>2</sub> )	AES and SPDIF	The unit and the source equipment lock to a Master Clock. The source equipment's word clock input must be connected to a Master Clock output at the correct frequency.



The sync mode setting is stored separately for each input.

## Using the unit in Master mode

When using the network or USB inputs, the unit automatically defaults to Master mode if a Master Clock is not connected. If you prefer, you can set these inputs to Master mode, ignoring any connection to the word clock inputs.

## Using the unit in Audio sync mode

When using the AES or SPDIF inputs, you can set the unit to lock to the data stream from the source audio equipment.

1. Switch on the unit.
2. Switch on the source audio equipment.
3. On the unit, choose the input you want to lock.
  - ▶ *For more information, see "Changing the source input" on page 22.*
4. Set the clocking sync mode on the unit to Audio.

## Locking the unit to a Master Clock

To minimise jitter, you can lock the unit to a Master Clock. If the Master Clock has an available output, you can use it to also clock another audio source, such as a CD transport.

1. Switch on the unit and the Master Clock.
2. On the unit, choose the input you want to lock to the Master Clock.
  - ▶ *For more information, see "Changing the source input" on page 22.*
3. Using two BNC cables, connect the *WORDCLOCK* output sockets on the Master Clock to the *WORDCLOCK* input sockets on the unit.
4. If you are also locking another audio source to the Master Clock, switch it on and connect the Master Clock to the word clock input on the source equipment.
5. Set the clocking sync mode on the unit to Word Clock 1-2 Auto. The LINA Network DAC selects the appropriate clock input and locks to it.

# dCS Mosaic

dCS Mosaic is a bespoke collection of hardware and software modules that allow you to access your digital music. With dCS Mosaic, you can stream content from the following:

- Local streaming sources, such as a music server on your network or using Apple AirPlay
- Internet services, such as Spotify, TIDAL, Qobuz and Deezer
- Internet Radio
- Podcasts via Airable

## The Mosaic Control app

Mosaic Control is an app for your iOS or Android mobile device. With the Mosaic Control app you have access to a vast library of music through a simple, yet powerful interface. You can use the app to:

- Browse media from various streaming services
- Manage settings and configuration options for your dCS products

To download the Mosaic Control app, visit the app store on your iOS or Android device and search for dCS Mosaic.



## Help using the Mosaic Control app

To view the User Guide for the Mosaic Control app, visit <https://dcs.community/t/dcs-mosaic-user-guide/>

# Using the LINA Network DAC

## Changing the source input

You can cycle through the available source inputs using the menu.

1. Tap .
2. Tap .
3. Tap  to change the input.

Each time that you tap the button, it advances through the list of available inputs.



Streaming a track from the network automatically selects the network input.

## Changing the shortcut buttons

From the home screen, three of the touch buttons act as shortcut buttons. Tap these buttons to quickly change your favourite settings. The default shortcut buttons do the following:

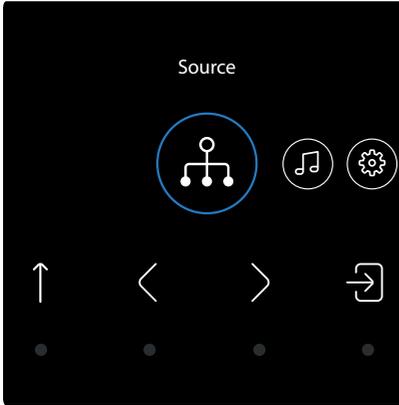
- Change the input source.
- Change the PCM filter.
- Change the crossfeed setting.

To choose a different shortcut action:

1. Touch and hold .
- Three white, square reset icons appear on the display.
2. Tap the button for the shortcut you want to change to choose a different action.
3. Tap  to save changes.

# Navigating the menu

To navigate the menu on the unit, tap the buttons below the display.



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☰	Open the main menu	<	Move to the previous item
↑	Move up a level or exit the menu	>	Move to the next item
→	Enter or select		

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# Menu overview

The table below shows the menus and settings available on the unit.

<b>Source</b> 		NETWORK 	AES 1 	AES 2 	DUAL AES 
		SPDIF 1 	SPDIF 2 	SPDIF 3 	USB 1 
<b>Processing</b> 	<b>Crossfeed</b> 	Off 	Crossfeed 	Expanse 1 	Expanse 2 
	<b>Filter</b> <b>F1</b>	Filter 1 <b>F1</b>	Filter 2 <b>F2</b>	Filter MQA <b>M1</b>	
	<b>DSD Filter</b> <b>F1</b> DSD	DSD F1 <b>F1</b> DSD	DSD F2 <b>F2</b> DSD	DSD F3 <b>F3</b> DSD	DSD F4 <b>F4</b> DSD
	<b>Upsampling</b> 	DSD 	DXD 		
	<b>Phase</b> 	In phase 	Inverted 		

<b>Device Settings</b> 	<b>Sync Mode</b> 	<b>W Auto</b> 	<b>Audio</b> 	<b>Master</b> 	<b>W/C1</b> 	<b>W/C2</b> 	
	<b>Dual AES</b> 	<b>Off</b> 	<b>On</b> 	<b>Auto</b> 			
	<b>USB Class</b> 	<b>Class 2</b> 	<b>Class 1</b> 				
	<b>Buffer</b> 	<b>Off</b> 	<b>On</b> 				
	<b>Line Output</b> <b>2V</b>	<b>2V</b>	<b>6V</b> <b>6V</b>				
	<b>Display</b> 	<b>On</b> 	<b>Off</b> 				
	<b>Brightness</b> 	<b>1 - 15</b> 					
	<b>Factory Reset</b> 						
	<b>Test</b> 	<b>Channel Check</b> 					
		<b>Burn In</b> 					
<b>Information</b> 							

# Compliance and Safety

## FCC compliance statement



This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

You can determine whether this equipment is causing interference by turning it off. If the interference stops, it was probably caused by the equipment or a peripheral device.

If your equipment does cause interference to radio or television reception, try to correct the interference by one or more of the following measures:

- Turn the television or radio antenna until the interference stops.
- Move the equipment to one side or the other of the television or radio.
- Move the equipment further way from the television or radio.
- Plug the equipment into an outlet that is on a different circuit from the television or radio. (That is, make certain the equipment and the television or radio are on circuits controlled by different circuit breakers or fuses.)

(USA only) If necessary, consult dCS Americas Inc. or an experienced radio / television technician for additional suggestions.

Changes or modifications not expressly approved by dCS Americas Inc. could void the manufacturer's warranty.

This product has demonstrated electromagnetic interference compliance under conditions that included the use of compliant peripheral devices and shielded cables between system components. In order to maintain compliance with FCC regulations, shielded cables (including Ethernet network cables) must be used with this equipment. Operation with non-approved equipment or unshielded cables is likely to result in interference to radio and TV reception.

Responsible party (contact for FCC matters only)

dCS Americas LLC.

PNC Bank Bldg

300 Delaware Ave, Suite 210

Wilmington, DE 19801

USA

## EU Declaration of Conformity

This equipment has been tested and found to comply with the essential requirements of the following Directives: 2014/30/EU, 2014/35/EU and 2015/863/EU.

This device is certified for indoor use only.

## Korea Class B compliance statement

This equipment is for home use, and has acquired electromagnetic conformity registration, so it can be used not only in residential areas, but also other areas.

이 기기는 가정용(B급) 전자파적합기기로서 주로 가정에서 사용하는 것을 목적으로 하며, 모든 지역에서 사용할 수 있습니다.

# Safety

To prevent personal injury or damage to the unit, read the following safety messages before use.



## CAUTION

Read and comply with all safety messages and instructions in this document.

- Follow the cleaning instructions in the User Guide.
- Only install the unit according to the instructions in this document.
- Do not spill liquid on the unit or allow it to get wet.
- Do not install the unit near heat sources.
- Use only the attachments and accessories specified by dCS.



## CAUTION

To prevent the risk of electric shock and ensure the best audio performance, connect the unit to mains earth (ground) using the correct power cable.

- A grounding type plug has two blades and a grounding prong, which is provided for safety. If the provided plug does not fit into your outlet, contact a qualified electrician.
- Do not use the power cable if it is damaged.
- If this unit is not being used for a long period of time, disconnect the unit from the power supply.
- During lightning storms, disconnect the unit from the power supply to prevent power surges.



### CAUTION

The safety covers on the unit protect you from electric shock.

- Do not remove the safety covers from the unit.
- If you do remove the safety covers from the unit, it invalidates the warranty.



### NOTICE

If the unit is damaged, do not use it and contact a qualified service engineer. Possible causes of damage to the unit include the following:

- Liquid is spilled on the unit.
- A heavy object falls on the unit.
- The unit is exposed to rain or moisture.
- The unit is dropped.

### NOTICE

Damage caused to the unit by misuse of a mains regenerator or by a malfunctioning mains regenerator is not covered by the warranty.

- We do not recommend the use of mains regenerators.
- If you want to use a mains regenerator with variable voltage and frequency, set the voltage to match your local voltage. Set the frequency to either 50Hz or 60Hz.
- Do not change the output voltage of the mains generator while it is connected to the unit.

**NOTICE**

If the unit is cold and is moved into a warm room, condensation may form inside the unit. Condensation may interfere with the normal operation of the unit. If the unit has been kept somewhere cold, remove all packaging and leave it for 1-2 hours before using it to allow it to reach room temperature.



# LINA

[dcsaudio.com](http://dcsaudio.com) | [@dCSONlythemusic](https://www.instagram.com/dcsonlythemusic) | [info@dcsaudio.com](mailto:info@dcsaudio.com)

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*dCS*

ONLY THE MUSIC