REGAL

Closer to live music

DAC101
Owners Manual

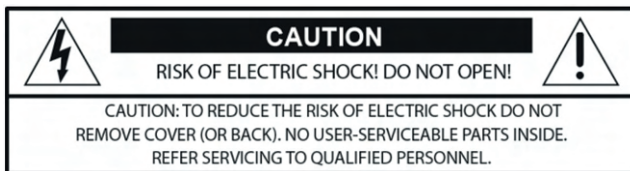Version 1.0

Digital to Analog Converter

regalaudio.se

Important Safety Instructions

• Read this manual carefully before operating the DAC101.

• Should you have any questions on how to setup or use your DAC101, please contact your authorized dealer.

• R. Audio Designs AB declines any responsibility in the event of an accident caused by the non-observance of these instructions.

• The DAC101 must not be exposed to dripping or splashing liquids. No objects filled with liquids, such as vases or naked flame sources, such as candles, should be placed on the unit.

• Do not install near any heat sources such as radiators, heaters, or otherapparatus, such as preamplifiers and amplifiers, that produce heat.

• Unplug this apparatus from the mains during lightning storms or when not in use for long periods of time.

• The DAC101 power supply supports only 230VAC / 50Hz.

• The DAC101 is a Class 1 equipment, it is essential that it is connected to a MAINS socket outlet with a protective earthing connection.

• Do not remove any covers or try to gain access to the inside. There are no user adjustments or fuses that can be changed without proper qualification.

⚡	**CAUTION**	⚠
	RISK OF ELECTRIC SHOCK! DO NOT OPEN!	
CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED PERSONNEL.		

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

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARRANTY

Warranty

R. Audio Designs AB, trading as Regal, certifies that this device has been inspected and tested before leaving the factory. Every Regal unit goes through our test system. We guarantee our products against manufacturing defects. For the DAC101, this warranty is valid for a period of three years from the date of delivery to the customer. Validation is done by matching the serial number on the device casing with the invoice from an official Regal dealer. This warranty is only valid for the original purchaser of new equipment. This limited warranty covers the repair and replacement of defective parts, excluding any other remedy. Please contact Regal for a RA (Return Authorization) and shipping instructions before shipping any product to Regal.

As we constantly strive to improve our products, we reserve the right to modify them or change their specifications without any notice.

INTRODUCTION

Introduction

The DAC101 is a high-performance digital-to-analog converter (DAC) designed to provide exceptional audio quality for discerning listeners. Utilizing R2R D/A conversion technology and innovative design concepts, the DAC101 delivers transparent sound with natural high resolution, ensuring an immersive listening experience.

DAC Technology

The DAC101 features R2R non-oversampling technology renowned for its musical qualities, thanks to its simplicity without digital filters or feedback loops. To address sensitivity to clock jitter, advanced reclocking techniques are employed. Additionally, class A output stages and patented Zero technology embedded in the circuit board contribute to authentic timbre and transparent sound reproduction.

Key Design Concepts

• **Reclocking**: Utilizes advanced PLL reclocking for ultra-low jitter, ensuring precise signal synchronization.
• **Low Loss Signal Path**: Ensures minimal signal degradation for pristine audio quality.
• **Class A Output Stage**: Delivers high-fidelity output with minimal distortion and coloration.
• **Passive Analog Power Suppl**y: Provides clean, stable power to the analog components for enhanced sound reproduction.
• **Clean Design**: Designed with listeners in mind, featuring a minimalist aesthetic.

Features

• Supports 24-bit PCM audio up to 192 kHz on all digital interfaces.
• Dual R2R D/A converters for precise signal conversion.
• 20-bit D/A resolution with manually trimmed linearity for accurate audio reproduction.
• 2 x 4 Farad direct power for the analog audio section, ensuring stable and consistent power delivery.
• Patented Zero loss technology integrated into the output stage for optimal sound quality.

Unpacking
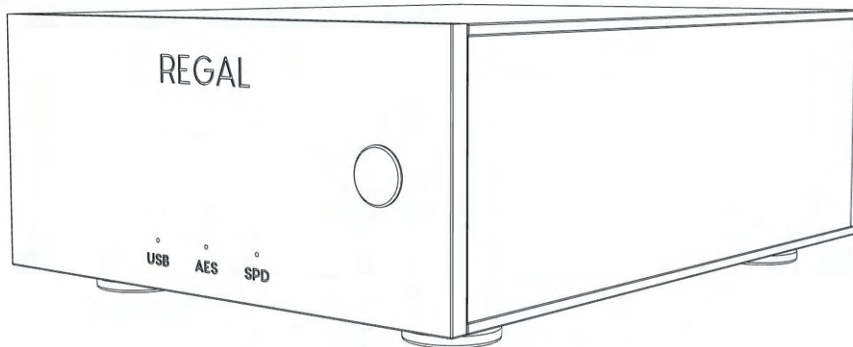
The DAC101 should be removed from its box with care.
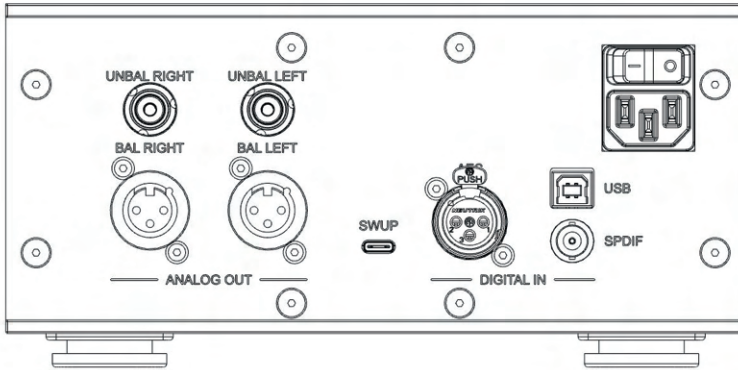
What is in the box: DAC101 Digital to analog converter
                          AC Power cable
                          Owner's manual

Once the unit is unpacked, inspect it thoroughly and report any damage to your dealer immediately.We suggest that you keep all of the original packaging, storing it in a safe, dry place in case you're requiredto transport this product. The customized packaging is specially designed to protect the unit from anypotential damage during transit.

Installation

Do not place the DAC101 on an amplifier or any other equipment that generates heat. The chassis feature an anti-vibration base (Isoacoustics) that makes it insensitive to vibrations. The unit must be installed horizontally on a flat, firm and stable stand.
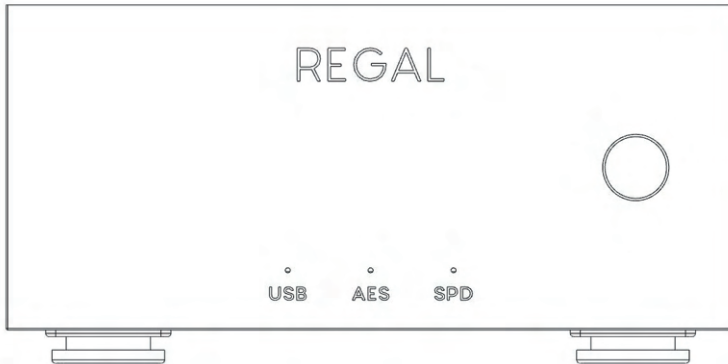
CONNECTIONS

AC Power:	230V / 50Hz:	IEC C14 connector with power ON/OFF switch.
Digital inputs:	AES:	XLR connector for 110 ohm AES/EBU stereo PCM data, up to 24bits / 192kHz.
	SPDIF:	BNC connector for 75 ohm SPDIF stereo PCM data, up to 24bits / 192kHz.
	USB:	USB-B connector to computers and servers for stereo PCM data, up to 24bits / 192kHz.
Analog outputs:	Balanced:	XLR connectors 2 V_{RMS} @ 0 dBFS
	Unbalanced:	RCA connectors 2 V_{RMS} @ 0 dBFS
Software update:	SWUP:	USB-C connector for software update.

The software update interface (SWUP) must only be used by Regal or authorized service personell. Owners and dealers are not authorized to update the software.

USER INTERFACE

Push button: Select digital audio input.

USB LED: USB digital audio input is selected.

AES LED: AES/EBU digital audio input is selected.

SPD LED: SPDIF digital audio input is selected.

Note: The input select function is activated as the DAC101 is ready to play songs.
Note: Should the DAC101 be switched OFF then ON again, the activation phase will start again from zero.

OPERATION

USB Driver

• No drivers needed for Linux with UAC2 compliant kernel.

• No drivers needed for MAC OS version 10.6.4 and above.

• ASIO/KS/WASAPI/Direct Sound drivers are necessary for Windows XP to 11 (32 and 64 bit). Licensed XMOS USB Audio 2.0 Stereo Driver for Windows can be downloaded from http://www.jlsounds.com/drivers.html

Power up

The analog output stages of DAC101 rely on supercapacitors for power supply, which need to be charged prior to operation. This charging process takes around one minute, during which the front panel LEDs will display a rolling pattern. As the supercapacitors are fully charged the DAC101 is fully operational and digital audio input can be selected using the push button on the front panel.

Breaking in

Breaking in the DAC101 takes some time but is well worth the effort. It would be a mistake to pre-judge the sound quality before 100 hours. During break-in, it is best to feed an external digital audio signal or M-noise into any of the digital inputs of the DAC101. M-noise typically reduces the break-in time by a factor of two compared with music. A wav-file with M-noise can be downloaded from https://regalaudio.se/downloads/

During playback

When switching songs within your player software, the DAC automatically decodes the received sample rate. Depending on the change in sample rate between songs, there may be a slight variation in mute-time. This is attributed to the reclocking PLL, which synchronizes to the new clock frequency. This DAC will never perform any sample rate conversion or any signal processing that could adversely affect the sonic performance, but rather use the exact bits from your file and convert them directly to analog using an ultra low jitter clock.

RECOMMENDATIONS

Case cleaning

Clean the DAC101 casing by using a soft, non-fluffy, slightly damp cloth. Do not use any cleaning products as this could permanently damage the surface finish of the casing.
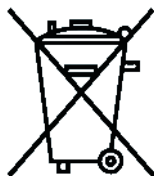
Power cycling

It is recommended to leave the DAC101 powered on except for longer periods when not being used.

Cabling

To achieve the best possible sonic performance of the DAC101 it is recommended to use Regal Zero technology interconnect cables. As the DAC101 is designed with our patented Zero technology, pairing it with Zero technology interconnect cables for the most transparent and natural sound.

Ground loops

The DAC101 features galvanically isolated digital audio input interfaces, distinguishing it from many other DACs. This isolation ensures reduced susceptibility to conducted noise from digital products such as streamers and servers. By effectively cutting the ground current loop for noise, the galvanic isolation may significantly enhance the performance of the entire audio playback system.

Disposal of old electrical & electronic equipment (Applicable in the European Union and other European countries with separate collection systems). This symbol on the product or on its packaging indicates that it should be handed over to the applicable collection point for the recycling of electrical and electronic equipment. By ensuring this product is disposed of correctly, you will help prevent potential negative consequences for the environment and human health. The recycling of materials will help to conserve natural resources. For more detailed information about recycling of this product, please contact your local authority, your household waste disposal service or the shop where you purchased the product.

Applicable to the following devices: DAC101 and all the package contents.

SPECIFICATIONS

Digital inputs	1x AES/EBU Galvanically isolated
	1x SPDIF Galvanically isolated
	1x USB Audio 2.0 Galvanically isolated
Analog outputs	1 stereo RCA unbalanced
	1 stereo XLR balanced
Output level	2 V_{RMS} @ 0 dBFS
Output impedance	RCA 10 ohm
	XLR 20 ohm
Noise floor	-130 dBr
THD	0.003 % @ 2 kHz, -6 dBFS
Frequency response	0-50 kHz +0 / -1 dB
Mains power	230 VAC, 50 Hz
Power compumption	25 W
Operating environment	Indoor only
Dimensions (WxHxD)	220 x 110 x 300 mm
Weight	3.5 kg

Specifications may change without notice.

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