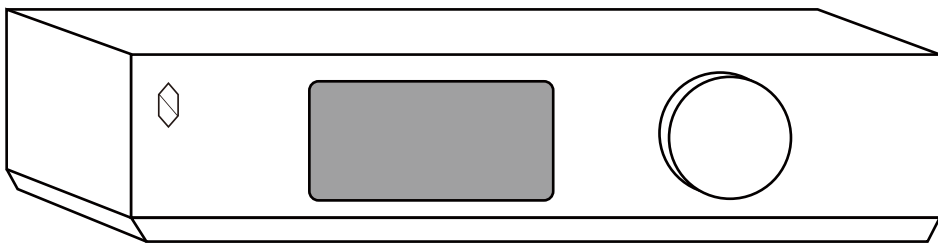# WELCOME

Thank you for choosing D2/D2V.

Please have a few minutes for this manual before powering D2/D2V on. In what follows, D2 refers to both D2 and D2V, but anything related to volume is applicable to D2V only.

CONTENTS

UNPACKING

You will find in the D2 box the following:

- COS D2
- a remote control (D2V only)
- this manual

Please keep the D2 box. In an unlikely event that maintenance is needed, the box shall be used for protection of D2 in transit.

PLACEMENT

D2 needs a solid and stable surface to stand firmly, and four boots should help keep it level. D2 does not need much air to stay operational, but suffocating it is certainly a bad idea. Where D2 is placed is not critical, but please keep it away from known magnetic fields.

MAINS CONNECTION

D2 works from 100 to 240VAC mains, so voltage selection is not needed.

INPUT

#1 USB Audio (USB Type B connector)
D2 supports both USB Audio Class 1.0 and 2.0 with the following sampling rates and bit depths:

- Audio Class 1.0 - up to 96K samples per second, 16/24 bits depth
- Audio Class 2.0 - up to 192K samples per second, 16/24 bits depth and DSD64/DSD128 (DoP)

Please set D2 into standby mode and use the USB AUDIO switch on the back panel to make your selection. The selected class takes effect when D2 leaves standby mode. Both Audio Class 1.0 and 2.0 work on MAC OS, but only Class 1.0 works on Windows. They are natively supported; there is no need for additional device drivers.**

#2/#3 Optical Input (Toslink)
#4 S/PDIF Input (RCA connector)
#5 AES/SBU Input (XRL female connector pair)
 Pin 1: Ground
 Pin 2: Signal + (non-inverting)
 Pin 3: Singal - (inverting)
 Connector ground lug: chassis ground
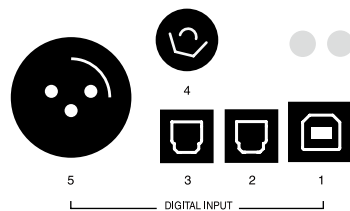
ANALOG OUTPUT

1. Unbalanced analog output: RCA
2. Balanced analog output: XLR male
 The pin assignments of these XLR-type male outputs are:
  Pin 1: Ground
  Pin 2: Signal + (non-inverting)
  Pin 3: Singal - (inverting)
  Connector ground lug: chassis ground
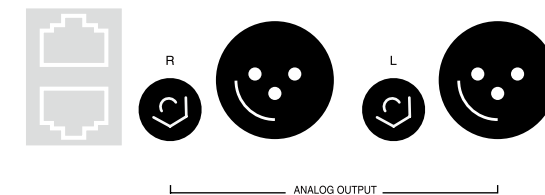
BUFFER SELECTION

There is a buffer switch on the back panel, and it should be turned on for optimum performance. Sometimes digital music data do not move along and get converted in perfect tandem, which causes jitters, and even a few micro-seconds timing error is enough to perturb the ears and frustrate the mind. Therefore, D2 uses a buffer of one-second depth, along with an independent and accurate clock, to receive data, align them and send them out in precise time frames for conversion.

For videos, the buffer should be switched off. This selection makes D2 reduce the depth of the buffer a little to ensure video-audio synchronization. Switching the buffer on or off takes effect immediately.
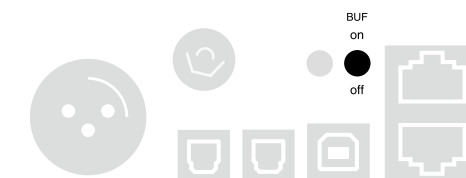
USB AUDIO SELECTION

D2 supports both USB Audio Class 1.0 and 2.0. The main difference between USB Audio Class 1.0 and 2.0 is that the USB Audio Class 1.0 can't go beyond 96K samples per second with 24 bit data depth.

Always power D2 off or put D2 into standby mode before adjusting the USB Audio Selection switch. The selection takes effect when D2 is powered on or leaves standby mode.
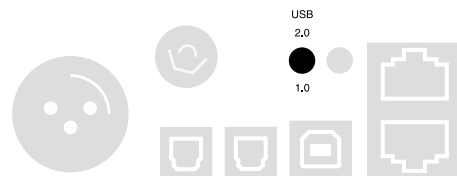
POWERING ON AND OFF

After power is switched on, the COS logo will appear on the display for a few seconds, and the working status such as input source will be shown afterwards. Now D2 is successfully powered on and ready for input source selection.

SELECTING INPUT SOURCE

The default input source is USB 1.0 or 2.0 depending on your selection from the back panel, and the next input source can be selected by shortly pressing the knob. The order of the selection is USB 1.0 (or 2.0), Optical, RCA, XLR, and back to the USB 1.0 (or 2.0) as a loop.

ADJUSTING VOLUME LEVEL

Volume is changed by rotating the knob. Rotating the knob counterclockwise brings the volume up; clockwise, down. And it is shown on the display from -63.75dB to 0dB (loudest) with a 0.25dB interval.
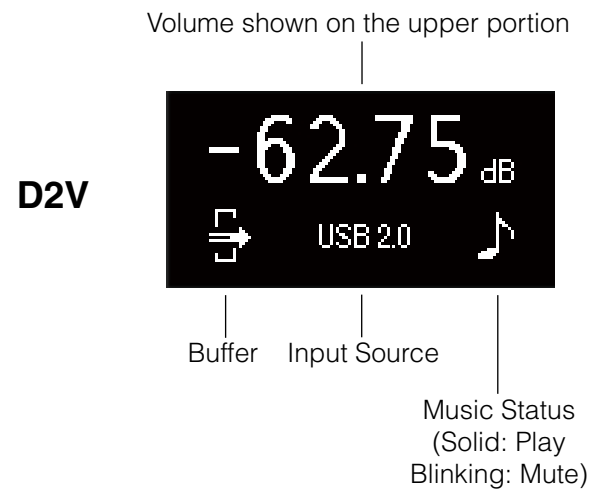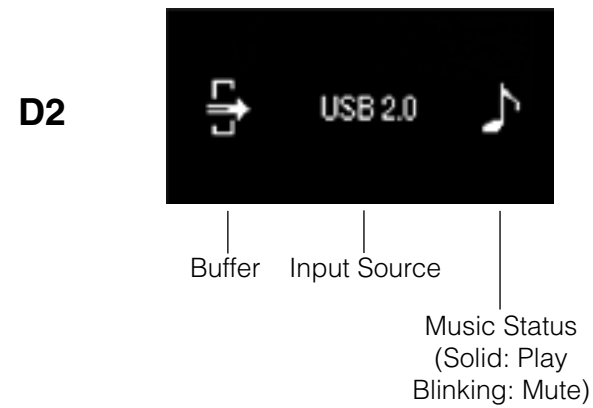
STANDBY MODE

A long press (about one second) on the knob or a press on the STANDBY key on the D2 remote control puts D2 into standby mode. In this mode, the volume and output relays are turned off, and D2 goes into a state of low power consumption. Another long press on the knob or a press on the STANDBY key on the remote control makes D2 leave standby mode; music resumes and volume hops back to the previous level.

REMOTE CONTROL

The D2 remote control is easy to use. Just aim the remote control at D2 and press buttons. When power is running low, please use a screwdriver to open the cover at the back of remote control to replace batteries.

DISPLAY

A 128 by 64 pixels white OLED display is used to show the current status.

D2

Buffer   Input Source

Music Status
(Solid: Play
Blinking: Mute)

Volume shown on the upper portion

D2V

-62.75 dB
USB 2.0

Buffer   Input Source

Music Status
(Solid: Play
Blinking: Mute)

TIPS for OPTIMUM PERFORMANCE

• Give D2 ten minutes to warm up and attain an internal thermal equilibrium, which ensures a seamless flow of enchanting music.

• Switch the one-second buffer on for music and off for video.

• Turn off the up-sampling feature of your player and play music at its original sampling rate. D2's dedicated DSP with COS Engineering's algorithms will do a the job.

• Fix the volume of your player at its maximum and use D2 to adjust volume. Failing to do so may reduce the bit-depth of music data and compromise musicality.

** If you are a Windows user and interested in using Audio Class 2.0 for D2, please visit www.cosengineering.com. Driver and more information are available.

SPECIFICATIONS

DAC

Digital Inputs	USB x1, Asynchronous 1.0/2.0; SPDIF x 1; TosLink x 2; AES x 1
Sampling Rate	TosLink x 2; AES x1 Optical / RCA / XLR: up to 192K PCM 24 bits & DSD64 (DoP) USB 1.0 – up to 96K PCM 24 bits USB 2.0 - up to 384K PCM 24 bits & DSD64/DSD128 (DoP)
Digital-to-Analog Converter	24-bit DAC x 2 (up to 192Ksps, 24-bit)
Digital Filter	COS Proprietary Linear Phase Delay

Steps	256 steps by 0.25dB/step
Total Range	64dB
Accuracy	Within ± 0.1dB

Analog Output

Frequency Reponse	+ 0dB, - 0.5dB (20Hz ~ 20KHz)
THD+N	< 0.001% (- 100dB) (192Ksps, 24-bit, 20Hz ~ 20KHz, A-weighted, 16 ohm load, 2Vrms)
Signal-to-Noise Ratio	>110dB (192Ksps, 24-bit, 20Hz ~ 20KHz, A-weighted, 16 ohm load, 2Vrms)
Output Impedance	100 ohm
Full Scale Output	Unbalanced: 2Vrms Balanced: 4Vrms

General

Disply	128 x 64 pixels white OLED
Weight	3.5 Kg
Dimension	260 mm (W) x 250 mm (D) x 60 mm (H) (boot is not included)
Power	100 ~ 240VAC Normal Operation < 15W Standby 0.5W (typical)