

# Opera Consonance Reference DSD1.1 digital converter

by Nicholas Ripley



**O**pera Consonance is one of those brands that fly perpetually beneath the audiophile radar for no good reason. It's a company that makes a range of highly respected, multi award winning products, including analogue and digital source components, valve and solid-state amplifiers, even cables and loudspeakers. The models are consistently good to excellent performers, and those who happen across them, love 'em.

I would like to think Opera Consonance's Reference DSD1.1 digital converter is the breakout product, the one that

gives the brand the recognition it so deserves. The converter is a fully functioning digital hub, capable of processing every PCM signal it's possible to receive and DSD to DSD256 (all through USB 2.0), as well as good ol' 16/44 PCM files from a CD transport with any kind of S/PDIF or AES/EBU connection. It even has provision to communicate to iOS and Android devices, and the website describes a Frankenstein-grade three-way clunky way of extracting USB audio from a phone with an add-on power supply (Bluetooth is available too). The Reference DSD1.1 also has the option of being a very capable headphone DAC.



▶ line outputs and single-ended RCA outputs that also pass through an E88CC-based triode output stage. There are also five PCM filter settings, absolute phase adjustment, two DSD high-frequency brick wall filters, and three undefined 'sound mode' settings, all selectable from the front panel.

Opera Consonance is somewhat hazy on the subject of what internal architecture is used in the Reference DSD1.1, but it appears to be based around an AK4490 DAC/filter chip from Asahi Kasei Microdevices. This is a 32bit chip that can decode DSD without any internal conversion to PCM, sports those five aforementioned filters, and supports PCM files up to a notional precision of 32bit, 768kHz. It's becoming popular as the chip of choice in some decidedly top-end devices, such as the Astel & Kern AK380 and Esoteric's K-05X/07X disc players.

The five filters for PCM are 'short delay sharp', 'short delay slow', 'sharp roll-off', 'slow roll-off' and 'super slow roll-off'. The term 'sharp roll-off' in the first and third filter equates to the standard brickwall filter found in 'traditional' CD replay. The three slow roll-off filters reflect the more recent trend in digital audio to reduce high-frequency digital 'hash' and post-ringing from an impulse response, and are often called 'soft-knee' filters. The two 'short delay' filters replace the standard linear phase filter design with a minimum phase design. This is useful in reducing pre-ringing to an impulse response. The choice of filter is largely system dependent, offering a mild tailoring of the upper registers of your player. My take on this – experiment! Start with the standard sharp roll-off, then try with the slow roll-off and switch between the two a few times over the course of a week or so. If you conclude the system sounds 'energetic' or 'bright' with the sharp roll-off, stay with it. If it sounds too 'dry' or 'dull' with the 'soft-knee' filters, try the appropriate filter again.

listening out for the right balance between 'energetic' and 'dry'. Eventually, you'll find the right setting for your system. Note that this doesn't change the underlying tonal qualities of the Reference DSD1.1; it's more about fine-tuning.

The concept of a DSD cut-off filter might at first glance seem to run counter to the very concept of DSD, but in fact it's a handy 'get out of jail free' card in some systems. Some DSD recordings are not as good as hoped and high-frequency component can – in extreme cases – trigger noise that filters down into the audio band. A filter at 150kHz and 50kHz can usually prevent this. Also, there are some systems where a super wide bandwidth source 'upsets' the input and gain structure of an amplifier designed for 20Hz-20kHz sound, and you might not discover this until you power up the DSD1.1; rather than give back your shiny new converter, this allows you to remove the high-frequency component until the next amp comes around.

The missing element in the Reference DSD1.1's line up is any form of DLNA/UPnP or Internet streaming. However, a close inspection of the Opera Consonance line shows that task is taken up by another product in the line – the Reference 8-20 anniversary music player. The DSD1.1's role in life is to decode, not to act as a half-way media player. Given many companies seem to think streaming means adding an off-the-shelf display, Wi-Fi board, and media player circuit to an existing DAC, and letting the end user pick up the pieces, I applaud Opera Consonance for sticking to its guns. A slightly more cynical reading of the situation is home streaming has still to make its mark in China where the company is based, and Opera Consonance's line-up reflects that scene. However, I think the company has a more international outlook at its core, and the Opera Consonance Reference DSD1.1 is part of a wider plan. Also, if you plan on streaming it's a perfect match for Foobar 2000 or J River.

*"What is common to both balanced and single-ended outputs is a strong sense of both scale and refinement – especially refinement."*

Opera Consonance has several different designs running at the same time. This is one of its classic or Reference line models, sporting an arched slatted wooden or metal top plate, with a black or silver front panel and a symmetrical layout of a pair of chromed knobs either side of a central display. There's also the squared off, none-more-black 'Forbidden City' line, the rounded off 'Figaro' models, and the distinctive, curved 'proplet' models. But the Reference models are perhaps the most immediately recognisable products from Opera.

The Reference DSD1.1 is almost two DACs in one. The principle notes on the balanced stage and headphone amp speak of a DAC that is focused, transparent, and dynamic. The single-ended DAC notes are more about the DAC's expressiveness, and its tonal and timbral qualities. Ultimately these are qualities common to the Reference DSD1.1 across both its outputs, it's just that the accent changes slightly when moving from balanced to single-ended. Note, however, this doesn't apply to different file formats, and the DAC is extremely consistent in moving up the audio ladder. In fact, it creates one of the most credible DSD performances I've heard at this price point, regardless of choice of output.

What is common to both balanced and single-ended outputs is a strong sense of both scale and refinement – especially refinement. This refinement is not bought at the expense of leading or trailing edges of music, and it doesn't mean the DAC is rolled off at the top or overblown in the bass; these are the usual trade-offs to gain a touch of high-end sophistication without a five-figure price tag. Instead, it comes from a very fluid and organic sounding midrange, extending the harmonic structure of music up into the top registers and albeit to a lesser extent – down through the organ pedals. There is an ever-so-slight bloom to the sound in the upper bass that gives the Reference DSD1.1 a characteristic fullness in the presentation, like the LS3/5a's mild thickening of piano.

This refinement is more about presenting the sonic beauty of music than its sheer attack, and it would be easy to dismiss the Reference DSD1.1 as a DAC that doesn't 'time'. In fact, I think a more accurate reading of the Reference DSD1.1's performance is that it's a DAC that emphasises phrasing over timing. There is an excellent sense of flow from musical theme to theme, and the DAC is very keen at displaying the changes in tempo within those musical themes.

Where it lags a step behind the Rhythm Kings is working those subtle 'microtiming' changes that separate, say, a really profoundly good jazz drummer from some 'going through the motions' session guy or Sunday afternoon pub player. This is a subtle distinction, however, and I would be happy to trade that temporal precision for the refinement and ease of listening that Reference DSD1.1 brings to music. The headphone amplifier stage is good, too. It's not an afterthought, but neither is it designed for serious users with amp-crushing headphones.

Ultimately, the Opera Consonance Reference DSD1.1 is an extremely good device, straddling as it does the old-school 'add me to a CD player' DAC and the new world of USB. It's a refined performer, which is all the more attractive when you compare it to many of the assaults on the ears delivered by more forward-sounding DACs and streamers. +

## TECHNICAL SPECIFICATIONS

**Type:** DSD-capable USB DAC/headphone amplifier

**Supported audio:** 32bit / 768kHz DSD64(1bit 2.8M)  
DSD128(1bit 5.6M) DSD256(1bit 11.2M)

**Digital inputs:** Coaxial RCA (75 ohm) x1, Optical x1,  
AES EBU x1, USB-typeB port x1, Bluetooth x1  
(name: Operaudio)

**Analog outputs:** RCA (2.2V RMS) x1, XLR (4.6V RMS) x1  
6.5mm headphone jack x1

**SNR:** >118dB (RCA,XLR)

**Distortion:** <0.002% (XLR output), <0.08 (RCA output)

**Dimensions (HxWxD):** 10.4x33x44cm

**Weight:** 9kg (wood top panel) 12kg (Metal top panel)

**Price:** £1,595

**Manufactured by:** Opera Consonance

**URL:** [www.opera-consonance.com](http://www.opera-consonance.com)

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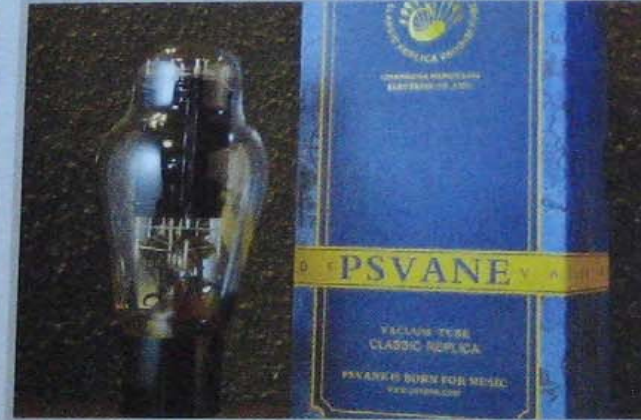
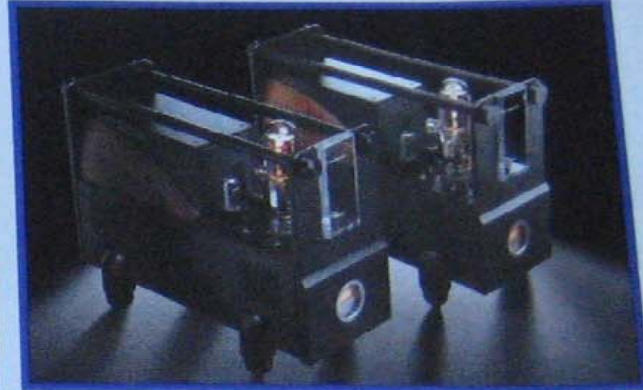
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