

# Woo Audio WA11 Topaz portable headphone amp/DAC

by Chris Martens



In the iconic martial arts film *Enter the Dragon* the great martial artist/actor Bruce Lee critiques the performance of a young pupil who is practicing a combination of punches. The pupil's performance appears technically sound enough, yet something is missing. The missing ingredient, Lee's character astutely explains, is "emotional content." This simple piece of advice applies equally well to audio component design, and it neatly explains the appeal of Woo Audio's WA11 Topaz portable headphone amplifier/DAC.

Conceptually, WA11 Topaz was born out of Woo's successful, though larger and more expensive, valve-powered WA8 Eclipse transportable, valve-powered headphone amplifier/DAC. Like the WA8, the WA11 is a highly capable portable amp/DAC whose sound quality rivals that of larger, more costly full-size desktop models. Unlike the mid-sized WA8 the more compact WA11 is a truly portable device. What is more, the solid-state WA11 is reasonably immune to vibration, which the WA8 is not (valves don't like to be jostled).

The WA11 provides a high-powered (1.2 Wpc @ 30 Ohms), wide bandwidth (10Hz–200kHz, -1dB), fully balanced, pure Class A solid-state amplifier section. The amp is quiet and features user-selectable hi/lo output levels. The WA11 provides two USB Type C inputs (one for its DAC, the other for its battery charger), plus a balanced analogue input (via 4.4mm Pentaconn jack). Two outputs are provided; balanced 4.4mm Pentaconn (which Woo recommends) and 6.35mm unbalanced.

The DAC section of the WA11 is based on an ESS ES9018M SABRE Reference DAC device, which supports PCM files up to 24-bit/384kHz and DSD files to DSD128 via DoP. The DAC uses XMOS xCORE-AUDIO asynchronous clocking via USB that is "compatible with PC, Mac, Android, and iOS devices."

A Lithium-ion battery provides up to six hours of continuous music playback, with charging via an included global dual-port USB charger and supplied USB-C cables. Importantly, the WA11 battery can be charged even while the amp/DAC is in play, which effectively extends playing time. I ran the WA11 with several superb headphones and earphones (the Campfire Audio Solaris, Final D8000, Meze Empyrean, MrSpeakers ETHER 2, and Sony IER-Z1R).

What enables an amp/DAC to convey emotional content? I think the device in question must combine, in roughly equal parts, high resolution, low noise, ample power output, high transient speeds, dynamic agility and expressiveness, unforced natural warmth, and the elusive quality of 'grip'. What makes the WA11 Topaz so successful is that it offers a well-proportioned combination of all these qualities at once.

On a high-res version of 'Miles Runs the Voodoo Down' from Davis' classic *Bitches Brew* [Columbia, DSD64], the WA11 offers sufficient sophistication to show how Davis' deftly shapes the voicing and tone of his trumpet to fit the musical phrases at hand. Where some amp/DACs give Davis' horn an almost 'monochromatic' quality, the WA11 instead delivers its full, rich

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palette of tonal colours and textures. Similarly, the Topaz shows the cool, syncopated vibe of the track's bass guitar lines—lines that convey a profound sense of 'funkiness'. In short, the WA11 doesn't just play notes; it plays the soul of the music.

Similarly, on 'Gibraltar' from Weather Report's *Black Market* [Columbia, DSD64], the Woo shows how the brilliant keyboardist Josef Zawinul has used multiple synthesizers to lovingly shape individual imaginary instruments to fit the needs of the song. Through the WA11, Zawinul's brilliance is on full display. But even more of the track's emotional content is expressed through the highly interactive 'conversational' interplay between Zawinul, saxophonist Wayne Shorter, bassist Alphonso Johnson, and percussionists Chester Thompson and Alex Acuña. Again, the Topaz shows the meanings and intentions underlying the notes.

Woo Audio's WA11 is the little amp/DAC that could. While the Topaz is not fully the equal of Woo's own ultra high-end electronics offerings, it conveys so much of their overall sound and feel for such a sensible price that it is surely destined to be a winner. +

## TECHNICAL SPECIFICATIONS

### Woo Audio WA11 Topaz portable headphone amplifier/DAC

**Type:** Portable, fully balanced, solid-state, Class A headphone amplifier/DAC

**Inputs:** USB Type C (digital audio), USB Type C (power/charging), 4.4mm Pentaconn (balanced analogue)

**Outputs:** 6.35mm headphone jack, 4.4mm Pentaconn balanced headphone jack

**Controls:** Illuminated on/off switch with battery reserve indicator lights, input selector switch (digital or analogue), gain switch (hi or low), rotary volume control (TKD 4-channel balanced potentiometer)

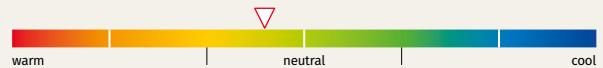
**DAC:** ESS Sabre Reference DAC ES9018M

**Formats Supported:** PCM to 24-bit/384kHz, DSD to DSD128 via DoP

**Power Output:** 1.2W @ 30 Ohms, 350mW @ 100 Ohms, 120mW @300 Ohms

## Summary

**Sonic Character:** Vibrant and highly musical sonics, with excellent natural detail



(All ratings relative to comparably priced portable headphone amplifier/DACs.)

### Resolution/Focus:



### Dynamics/Expression:



### Sound staging/Imaging:



### Freedom of noise:



### Features and versatility:



### Value:



## Pros

- Best known for its valve-powered designs, Woo Audio's WA11 Topaz proves the firm knows its way around solid-state circuits, too.
- Vibrant, full-bodied sound (considerable better, in fact, than many desktop headphone amplifier/DACs).
- Robust and expressive dynamics.
- Very fine levels of detail with no artificial-sound 'edge enhancements' or untoward spotlighting.

## Cons

- Woo's minimalist, 'keep-it-simple' design approach may not suit listeners looking for an amp/DAC with a broader features set (e.g., an amp/DAC with multiple user-selectable digital filters, 3D enhancement circuits, bass.

**Frequency Response:** 10Hz-200kHz, -1dB

**SNR:** 118dB

**Battery:** Rechargeable Lithium-ion battery offering 6–7 hours of continuous playback. Note: The WA11 supports simultaneous playback and battery charging, which extends playing time.

**Supplied Accessories:** Alcantara carry bag, global 100v–240v USB-C charger with detachable AC plugs (US, UK, Australia), USB Type-C to A cable, USB Type C to C cable.

**Dimensions (H×W×D):** 85 × 155 × 27mm

**Weight:** 426g

**Price:** \$1,399

## MANUFACTURER INFORMATION

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