

JASON VICTOR SERINUS

Gryphon Ethos

CD PLAYER-D/A PROCESSOR

hat kind of creature is this? Gryphon Audio Designs' new Ethos (\$39,000)—pronounced EE-toss by its Danish manufacturers—is marketed as a CD player and digital-to-analog converter. It's decidedly au courant in that it includes two 32bit/768kHz ES9038PRO Sabre DAC chips—one for each channel—with each holding eight individual DAC chips; offers optional upsampling to either 24/384 PCM or DSD128; and decodes up to 32/384 PCM and quadruple DSD (DSD512) via its USB input, or up to 24/192 (and no DSD) via AES/EBU or S/PDIF. It does not decode MQA or the high-resolution layer of an SACD disc, and it has no Ethernet port. Aspects of its styling are eye-catching and resolutely retro: Its strikingly lit, top-loading disc mechanism resembles an LP platter, access to which is gained by lifting a tonearm-like handle. The gold-plated puck that holds the CD in place (as on most or all toploaders) evokes nothing so much as a CD record weight.

Especially when its CD transport lights up from within during disc loading, the Gryphon Ethos is the most beautiful audio component I've ever had the opportunity to handle. Once I had made peace with its wide choice of reconstruction filters—seven PCM and three DSD—and decided whether I preferred its optional upsampling feature, or not, I found the Ethos among the easiest of components to control, whether by its front panel or (sturdy) remote. I frequently found myself gazing at what Gryphon refers to as the player's "vacuum fluorescent" front panel display.

Like the gryphon of Greek mythology—its eagle head and wings and lion body are thought, by company founder Flemming E. Rasmussen, to represent "the perfect union" of grace and power—the Ethos is a singular creature that plays by its own rules.

From there to here

Gryphon's heritage extends back to 1985, when Rasmussen founded the company and began designing the exteriors of all Gryphon components. Gryphon's first product, a pureclass-A dual-mono head amp, was intended at first to enable Rasmussen to discern differences between phono cartridges more effectively. The revelation of detail and subtle differences were priorities from day one.

"It was the first pure dual-mono, pure class-A amplifier in the world, and it set our path forward," Gryphon's sales director, Rune Skov, explained at the start of a Skype conversation that also included Gryphon's chief engineer/head of R&D, Tom Møller, and CEO Jakob Odgaard. For 35 years, the company has stuck to a philosophy that stresses a synergy between aesthetics and performance. Gryphon remains dedicated to pure class-A, dual-mono, and fully symmetrical balanced circuitry, and strives for a neutral sound that eschews an identifiable house signature—that and, in Odgaard's words, "no fooling around with surround and multi-channel. We stick to what we were created for." Take that, Kal Rubinson.

"We use the same pathways as in 1985 but have added a lot due to the creativity of Tom and the rest of the guys in the R&D team," Skov said. Gryphon released the world's first asynchronous upsampling CD player, the Gryphon CDP-1, in 1998. Speakers followed in 1999 with the Cantata, a large bookshelf loudspeaker that included outboard Linkwitz circuitry to correct woofer output to the room.

"Our philosophy is one of controlled madness," said Skov with a laugh. "It's controlled madness because it makes no sense building 200W pure class-A amplifiers. We don't hold back on performance and would rather wait six months or one year to launch a product so that the performance level

SPECIFICATIONS

Description Single-box CD player and D/A processor with user-selectable filters and upsampling. Digital inputs: 1 USB B, 1 AES/EBU (XLR), 1 S/PDIF (BNC).
Analog outputs: 1 pair single-ended (RCA), 1 pair balanced (XLR). Digital output: 1 AES/EBU (XLR). Formats/sample rates supported: PCM to 32-bit/44.1, 48, 88.2, 96, 176.4, 192, 352.8, and 384 kHz.
DSD via USB: DSD64, 128,

256, and 512. BNC and XLR inputs limited to 24/192). Frequency range: CD mode: 10Hz-20kHz; DAC mode: 10-96kHz, depending upon sample rate. Output voltage: IV or 2V single-ended, 2V or 4V balanced. Output impedance: 7.5 ohms single-ended, 15 ohms balanced. THD+N (20Hz-20kHz B-weighted): <0.003% at -6dBFS, <0.01% at OdBFS.

Dimensions 18.9" (480mm)

W × 6.93" (176mm) H × 17.8" (453mm) D. Weight: 30.13lb (13.7kg).

Finishes Brushed anodized aluminum and black polished acrylic.

Serial numbers of units reviewed 0110046 (listening), 0110009 (measuring). Price \$39,000. Approximate number of dealers: 15. Warranty: 3 years workmanship and materials, 2 years on laser and movable parts.

Nontransferable.

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we seek is there. That's why the lifespan for a Gryphon product can be 10-15 years." Gryphon's top-loading Mikado CD player with asynchronous 24/96 upsampling came out in 2001, and the upgraded Mikado Signature with asynchronous 32/192 upsampling remained available until 2013, when the company could no longer obtain Philips' top-loading CD-Pro2 drive mechanism.

The design of the Ethos is intended to evoke Gryphon's digital *and* vinyl heritage. The design called for a top-loading mechanism that could be aesthetically enhanced to resemble an LP player, and finding a high-quality CD/SACD top-loading mechanism was virtually impossible. So Gryphon went with StreamUnlimited of Austria's CD-Pro 8 drive, which only handles CD. The Ethos is supported by Gryphon's Atlas spikes, whose height is adjusted using the small tool and old-fashioned level that are supplied with the unit.

"Many of our competitors take the current from the output and transform that into an analog voltage," Møller explained. "Instead, we take the voltage directly from the DAC circuitry and have a voltage-to-voltage, fully class-

A amplifier that is a central aspect of the Ethos's sound. Around the analog stage, the other components surrounding the transistors are discreet. We don't use ICs or op-amps in the signal path—it is fully discreet. The only op-amps we use are incorporated as a DC servo to ensure that no DC leaks into the analog output. We use . . . Melf resistors, which have very low current and voltage noise. We also use polypropylene film capacitors and very good electrolytic capacitors as well. Because the power supply is indirectly part of the signal path, we paid a lot of attention to it. As for the player's ports, we tried an Ethernet with another product, and we preferred the sound from USB when fed by a very good high-end USB cable."

Other defining aspects of the Ethos's design include a fully balanced class-A analog output stage that employs zero negative feedback. Outputs are balanced Neutrik XLR and single-ended gold-plated RCA. There are two separate analog toroidal transformers and two digital power supplies. (The Gryphon website has a long list of additional features that this Polly needn't parrot.)



Getting it on

While it was a snap to connect the Ethos to my reference Audio Research Reference 6 preamplifier—I used balanced interconnects all the way to my D'Agostino Progression monoblocks—I encountered several challenges during setup and operation. Once, while playing hi-rez PCM and switching between PCM and DSD upsampling, the unit sent a few seconds of white noise through my speakers. It passed quickly, and no damage was done. It never happened again, even though I switched between DSD and PCM upsampling many times during playback.

Second, due to a production error in this early unit, its rear AES/EBU input lacked the requisite release lever. Once I had inserted my cable, I couldn't remove it. Rather than risk damaging the unit by forcing it or inserting some

AP)

sharp tool, I returned the Ethos at review's end with the cable still attached and invited Gryphon to remove it and send it back.

I customarily send signals from my Roon Nucleus+ music server via Ethernet, but the Ethos is not a streaming DAC: I had to choose from its USB, AES/EBU, or S/PDIF inputs. Due to the structure of my multicomponent internet noise-isolation setup—a two-room equipment chain that Editor Jim Austin calls unduly complicated but which nonetheless contributes to my system's high level of transparency and detail—I lacked the ability to move the Nucleus+ close to the Ethos and connect it via USB. (I've figured out a solution for next time.) That left me with two choices: I could connect the Nucleus+ to my extremely transparent dCS Network Bridge and send that component's output signal

MEASUREMENTS

or logistical reasons, I tested a different sample of the Gryphon Ethos (serial number 0110009) from the one that JVS auditioned but was assured that the two samples came from the same production batch. I performed the testing with my Audio Precision SYS2722 system (see the January 2008 "As We See It") using its AES/EBU and S/PDIF digital outputs, test tones on CD, and USB data sourced from my MacBook Pro running on battery power, with Pure Music 3.0 playing WAV and AIFF test-

tone files. All the testing was performed with the player's upsampling turned off.

Before I played test CDs, I leveled the Gryphon's chassis with its three feet; a bubble level is provided for this purpose. The player's error correction was good—no glitches were audible in the player's output until the single gaps in the data spiral on the Pierre Verany Digital Test CD reached 1.5mm in length. (The "Red Book" Compact Disc standard requires only that a player cope with gaps of up to 0.2mm.) The AES/EBU and S/PDIF inputs locked to

datastreams with sample rates up to 192kHz, the USB input would handle 32-bit data sampled up to 384kHz. Apple's USB Prober utility identified the player as "Ethos USB" from "Gryphon Audio Designs ApS," with the serial number "413-001." The Gryphon's USB port operated in the optimal isochronous asynchronous mode.

The maximum output level from the unbalanced output was 2.16V, slightly higher than the CD standard's 2V. As



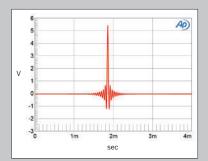


Fig.2 Gryphon Ethos, Filter 3, impulse response (one sample at OdBFS, 4ms time window).

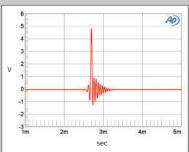


Fig.3 Gryphon Ethos, Filter 4, impulse response (one sample at OdBFS. 4ms time window).

Fig.1 Gryphon Ethos, Filter 2, impulse response (one sample at OdBFS, 4ms time window).

to the Ethos via AES/EBU, which, however, limited playback to 24/192 PCM files (and no DSD). Or I could load files onto my Macbook Pro, play them with Roon or other software, and send the output to the Ethos via USB, which can handle resolutions up to DXD and DSD512.

At the start of my many happy listening sessions, I attached my 2017 Macbook Pro to the Ethos via a 2m Nordost Valhalla 2 USB cable

that Nordost graciously supplied for the review. While the folks at Gryphon primarily use their own cabling for music playback, they recommend Nordost Valhalla 2 for USB.

Many audiophiles use computers for file playback and streaming, but I have yet to encounter a nondedicated computer with a noise floor as low as a good quality music server/streamer. This was certainly the case with my Macbook Pro, which I also use for show coverage, email, etc. While I easily affirmed that, using Roon, I could play DXD and DSD128 files via USB—Roon's playback limit is DSD128—the same pervasive grayness I experience when I run signal via USB from my computer to my reference dCS Rossini setup impacted my enjoyment.

Because I wanted to hear the Ethos at its best, I opted for Roon Nucleus+ into the dCS Network Bridge via Ethernet



into the Ethos via AES/EBU for the remainder of my listening.

As I write this, Gryphon is not yet an official Roon partner endpoint, but the Ethos recognizes Roon software and impressed me as taking full advantage of Roon's sound and metadata.¹ (Among the many documents available for download on the Ethos webpage is one that addresses USB Roon Core Setup.)

Once connected, I can't imagine that anyone would have difficulty

using the Ethos. The letters on the display that indicate when unsampling is engaged are small but visible from 12' away, and choices between filters and PCM or DSD upsampling are indicated in big print at the time of engagement. You will have a harder time seeing track numbers and other information from afar. Downloadable USB drivers are required for Windows users, but that's the case with virtually all DACs I've reviewed.

Being wowed

I started out with my CD of Patricia Barber's Jim Anderson-engineered *Higher* (CD, ArtistShare AS0171), our Sep-

1 Perhaps by the time you read this, Roon will have issued a major software update that adequately addresses the software's difficulty recognizing classical files that include diacritics and other indicators that, in Roon, render the files invisible.

measurements, continued

usual, the maximum balanced output level was exactly twice the unbalanced, at 4.32V. Both outputs preserved absolute polarity (ie, were noninverting) with the remote control's Invert button set to Off. Though higher than specified, the unbalanced output impedance was still a very low 30 ohms across the audioband; the balanced impedance was a low 59 ohms, again at all audio frequencies.

The Gryphon's impulse response varied considerably according to which of the seven reconstruction filters had been selected. With Filter 1, described in the manual as "slow roll-off, min-

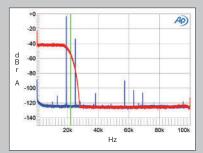


Fig.4 Gryphon Ethos, Filter 1, wideband spectrum of white noise at -4dBF5 (left channel red, right magenta) and 19.1kHz tone at OdBF5 (left blue, right cyan), with CD data (20dB/vertical div.).

imum-phase," the impulse response was a short minimum-phase type (not shown), Filter 2, described as "slow roll-off, linear-phase," had an extremely short linear-phase response (fig.1). Filters 3, 5, and 7 all had similar long, linear-phase impulse responses (fig.2), with ringing present either side of the peak. Jason's preferred filter, the hybrid Filter 4, has a small amount of ringing before the peak, with more ringing following it (fig.3). This response is very similar to that of the Hybrid filter offered by the Pro-Ject Pre-Box-S2.2 Filter 6 was a long minimum-phase type (not shown).

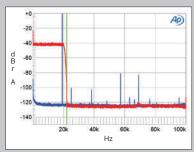
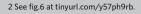


Fig.5 Gryphon Ethos, Filter 5, wideband spectrum of white noise at -4dBFS (left channel red, right magenta) and 19.1kHz tone at OdBFS (left blue, right cyan), with CD data (20dB/vertical div.).

Reconstruction filters with different impulse responses can behave similarly in the frequency domain. Tested with white noise sampled at 44.1kHz, the Gryphon's output with the minimum-phase Filter 1 (fig.4, red and magenta traces) was almost identical to that of the linear-phase Filter 2. Both began to roll off in the top audio octaves and exhibited a slow decline in output at ultrasonic frequencies, the aliased image at 25kHz of a full-scale 19.1kHz tone (blue and cyan traces) suppressed by around 25dB. With



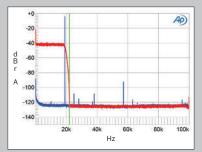


Fig. 6 Gryphon Ethos, Filter 4, wideband spectrum of white noise at -4dBFS (left channel red, right magenta) and 19.1kHz tone at OdBFS (left blue, right cyan), with CD data (20dB/vertical div.).

tember 2019 Record of the Month,² and compared its sound to Red Book FLAC files of the recording. Both ways, the sound was drop-dead gorgeous. With the REF 6 adding just a wee bit of extra warmth, glow, and air, I loved the natural fullness of the midrange and the guitar's spoton tonality.

Sticking with CD, I turned to an old reference standby, "Insensatez" from *Entre Amigos*, by bossa nova singer Rosa Passos and double bassist

Ron Carter (CD, Chesky JD247). The sound's ivory-tinged core was beautiful, and bass depth and control were excellent. Listening to Murray Perahia's performance, on piano, of Handel's Harpsichord Suite in E, HWV 430, from *Murray Perahia Plays Handel and Scarlatti* (CD, Sony Classical 62785), was a total joy.

Going back and forth among 10 filters (7 PCM AND 3 DSD) can be a recipe for madness, so I spent only a short amount of time comparing them. For PCM, each of the seven choices had strengths in one area or the other, but for my tastes, default Filter 4 offered the best overall combination of extended highs, full midrange, well-defined lows, and soundstage width and depth. As for DSD, I failed to discern a difference between the three filters, which differ only in their choice of ultrahigh pass band frequency.

Midway through my time with the Ethos, I was delighted that Gryphon's US distributor, Philip O'Hanlon of On a Higher Note, paid a visit to Port Townsend. In his bag



was a huge stash of reference discs, many of them hybrid SACDs. Although, per *Stereophile*'s review policy, I didn't share my listening impressions with O'Hanlon, I could not hide the smile in my eyes when he played the CD layer of his Tony Faulkner–recorded hybrid SACD of the Florestan Trio performing the second movement of Debussy's Piano Trio, on their recording of Debussy, Fauré and Ravel Piano Trios (Hyperion

SACDA67114). Depth was exemplary, and the piano's glow all one could ask for.

Or was it? This seemed the perfect time to experiment with the Ethos's upsampling feature. Once upsampled to DSD128, I felt that all barriers between me and the music fell away. While DSD upsampling certainly seemed most appropriate for the Red Book layer of a hybrid SACD—at least inasmuch as I would inevitably compare the experience to the sound of the disc's DSD layer—upsampling to either DSD or 24/384 PCM enhanced listening with additional air and depth. There was a far greater sense of believable acoustic space around the musicians, as well as additional texture and overtones. I liked the upsampling feature a lot.

Next, O'Hanlon chose the Red Book layer of a hybrid SACD of Vladimir Ashkenazy leading the Sydney Symphony Orchestra in Prokofiev's *Lt. Kije Suite* (Exton EXCL-

2 https://www.stereophile.com/content/recording-september-2019-higher

measurements, continued

Filter 5, described as an "apodizing" filter, the output rolled off very quickly above 20kHz (fig.5, red and magenta traces), reaching the noise floor at the Nyquist frequency of 22.05kHz, this indicated by the vertical green line. Filter 3, a "brickwall" type, behaves identically. Filter 4 also reaches full stop-band suppression by the Nyquist frequency (fig.6) but starts rolling off earlier than Filters 3 and 5. Filters 6 and 7 have identical ultrasonic rolloffs but

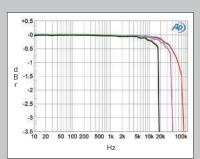


Fig.7 Gryphon Ethos, Filter 4, frequency response at -12dBFS into 100k ohms with data sampled at: 44.1kHz (left channel green, right gray), 96kHz (left cyan, right magenta), 192kHz (left blue, right red) (0.5dB/vertical div.).

reach the stop-band noise floor around 24kHz (not shown).

With 44.1kHz data (fig.7), Filter 4 starts to roll off a little above 10kHz but then drops like a stone around 17kHz. It also has some passband ripple, which is generally felt not to be a good thing, as do the frequency responses at 96kHz and 192kHz in this graph. Filters 1–3 have similar audioband responses to Filter 4. Although Filter 5 is flat to 20kHz with CD data, it

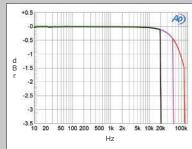


Fig.8 Gryphon Ethos, Filter 7, frequency response at -12dBFS into 100k ohms with data sampled at: 44.1kHz (left channel green, right gray), 96kHz (left cyan, right magenta), 192kHz (left blue, right red) (0.5dB/vertical div.).

has more passband ripple than Filter 4. Filters 6 and 7 are textbook fast-rolloff above 20kHz (fig.8). The Gryphon player doesn't apply deemphasis to preemphasized CDs, which results in a boost in the treble reaching 8.5dB at the top of the audioband. Fortunately, preemphasized CDs are very rare these days.

Channel separation (not shown) was superb, at >120dB in both directions below 1kHz, decreasing to a still-

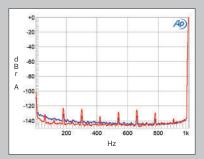


Fig.9 Gryphon Ethos, spectrum with noise and spuriae of dithered 1kHz tone at OdBFS (left channel blue, right red) (20dB/vertical div.).

00049). Prokofiev's music no longer draws me as much as it did in my childhood, when I played 78s of *Peter and the Wolf* many times, but I loved what I was hearing. In the second movement, baritone Andrei Laptev's voice especially impressed with its strength and beauty. We also auditioned hi-rez files of the Soundmirror-engineered version of the *Lt. Kije Suite*, from Thierry Fisher and the Utah Symphony Orchestra, due out soon on the Ref-

erence Recordings Fresh! imprint—it excels in sonics rather than conducting—and discovered that the Ethos conveyed pounding percussion with aplomb. Further confirmation that the Ethos can rock out came when I played tracks from Yello's *Toy* (24/48 WAV, Polydor 4782160/HDtracks) and, courtesy of Roon Radio, went flying on a pop music magical mystery tour.

Taking my lead from O'Hanlon's choice of Debussy, I cued up files of two recordings of Debussy's haunting *Trois Chansons de Bilitis*: one by mezzo-soprano Marianne Crebassa and pianist Fazil Say from *Secrets* (24/96 WAV, Erato 564483), and the other from one of Debussy's favorite interpreters, soprano Maggie Teyte, with Alfred Cortot, from *Maggie Teyte: A Vocal Portrait* (16/44.1 WAV, Naxos Historical 8110757-58). The Ethos conveyed their artistry with such clarity and beauty that for several days after, the cycle's second song kept playing in my head. With upsampling engaged, I felt that I could hear every slight nuance and breath



of Crebassa's performance, and I was moved as never before by the intentional absence of vibrato as she deepened her voice in the final song to simulate a man saying, with great profundity, "Les satyres sont morts / Les satyres et les nymphes aussi." No one I've heard does a better job with these lines than Teyte, who liberally infuses singing of exquisite delicacy and unsurpassed intimacy with an idiosyncratic downward portamento that makes me feel as

though she's experiencing any number of little deaths. (She has no equal in this regard.) As many times as I've heard these women's performances, I still found myself sitting in rapt attention, as though hearing them for the first time.

When we compared DSD to PCM upsampling on 24/96 WAV files of two different recordings of Debussy's Sonata for Flute, Viola and Harp—the period instrument Claude Debussy: Les Trois Sonates/The Late Works (Harmonia Mundi HMM902303) and modern instrument Debussy Sonatas & Trios (Erato 565142)—I preferred PCM upsampling with native PCM material. Even though upsampling to DSD128 enhanced the depiction of recording venue dimensions and distance from microphones, its ultrasmoothness got under my skin. It worked fine with native DSD material, but upsampling PCM to PCM 384 transmitted more of the natural leading edge of instruments and voices, and felt more open, organic, and credible.

After O'Hanlon left, I headed to Tidal and Qobuz for two

superb 103dB at 20kHz. The analog noise floor was extremely low in level (fig.9), and the only power-supply-related artifacts present lie at or below -125dB ref. OdBFS. Increasing the bit depth from 16 to 24 with a dithered 1kHz tone at -90dBFS sourced from the USB port lowered the noise floor by 23dB (fig.10). Though the low-level supply-related spuriae can still be seen, this reduction in noise suggests the Ethos offers a resolution close to 20 bits, which is excellent. With

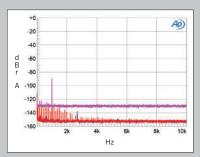


Fig.10 Gryphon Ethos, spectrum with noise and spuriae of dithered 1kHz tone at -90dBFS with 24-bit data (left channel blue, right red) and 16-bit data (left cyan, right magenta) (20dB/vertical div.).

undithered data representing a 1kHz tone at exactly -90.31dBFS (fig.11), the waveform is symmetrical and the three DC voltage levels described by the data are well defined, with no DC offset present. With 24-bit data at the same level, the Ethos outputs an almostperfect sinewave, despite the lack of dither (not shown).

The spectra in figs. 4-6 indicate that the Ethos has low levels of harmonic distortion. With the player driving a full-scale, 24-bit, 50Hz tone into 100k

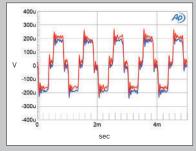


Fig.11 Gryphon Ethos, Filter 5, waveform of undithered 16-bit, 1kHz sinewave at -90.31dBFS (left channel blue, right red).

ohms (fig.12), the third harmonic is the highest in level but lies at -80dB (0.01%). The second harmonic is higher in the right channel (red trace) than the left (blue) but is still more than 20dB lower in level. These harmonics didn't increase in level when I reduced the load impedance to a punishing 600 ohms, suggesting that the Ethos has a bombproof output stage. When I tested the Gryphon for intermodulation distortion with an equal mix of 19 and 20kHz tones, actual intermodulation

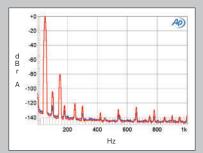


Fig.12 Gryphon Ethos, spectrum of 50Hz sinewave (DC-1kHz) at 0dBFS into 100k ohms (left channel blue, right red; linear frequency scale).

16/44.1 tracks he'd played from disc: Bob Walsh's "Ain't No Sunshine When She's Gone" and Anette Askvik's "Liberty." I loved the sound of both but was especially seized by the additional attention-getting clarity and bass that came with PCM upsampling.

When I switched to my reference dCS Rossini DAC/ transport/clock gear, I went back and forth more times than a dog turns in circles before sitting. I felt that the circa \$60,000 Rossini combo set images farther back in the soundstage, surrounded by even more air. It let me hear the back of the hall in ways I did not experience with the Ethos. On Rosa Passos and Ron Carter's "Insensatez," the Rossini upsampling transport conveyed more vibrant highs, more of the bass's bottom octaves, and sounded a mite warmer and smoother. On Ashkenazy's Prokofiev, the airier Rossini better conveyed the third movement's humor and scamper.

I had hoped to hold onto the Ethos long enough to audition it with the D'Agostino Momentum preamp that arrives next for review, which would have afforded yet another window into the Ethos's sound. Timing is everything, however, and the Ethos had to move on to the Capital Audio Fest. If you ever hear the two together, count me eager to hear your report.

God, Serinus, are you about to file yet another rave review? Have you been bought off by manufacturers, or are you listening through rose-colored glasses?

Lest I come across as a perpetually smiling Girl Scout cookie salesperson, whose innate optimism could convince a diehard nutritionist that sugar and white flour are health foods, rest assured that the antiglare tint on my plastic lenses is yellow rather than rose. Regardless, my response to the sound of the Gryphon Ethos CD player and digital-to-analog converter requires more smileys and flowery GIFs than this space can reproduce. The Ethos is one open, marvelously detailed, and fresh-sounding unit that makes listening to music an absolute joy.

ASSOCIATED EQUIPMENT

Digital sources dCS Rossini SACD/CD transport & Rossini DAC & Rossini Clock & Network Bridge; Apple 2017 Mac-Book Pro computer with 2.8 GHz Intel i7, SSD, 16GB RAM; Roon Nucleus+; Linksys routers (2), Small Green Computer Systemoptique optical isolation bundle, TP-Link gigabit Ethernet media converters plus multimode duplex fiber optic cable (2); Small Green Computer linear power supply (2) & Small Green Computer/HDPlex four-component 200W linear power supply (2); external hard drives, SSD USB sticks, iPad Pro.

Preamplifier Audio Research REF 6.

Power amplifiers Dan D'Agostino Master Systems Progression monoblocks.

Loudspeakers Wilson Audio Specialties Alexia 2. Cables Digital: Nordost Odin 1 & Odin 2 & Valhalla 2 (USB) & Frey 2 (USB adapter), Wireworld Platinum Starlight Cat8 and AudioQuest Diamond (Ethernet). Interconnect: Nordost Odin 2. Speaker: Nordost Odin 2. AC: Nordost Odin 2 & Valhalla, Kimber Palladian, AudioQuest Dragon HC. Accessories Grand Prix Monza 8-shelf double rack & amp stands, 1.5" Formula platform, Apex footers; Nordost QB8, QX4 (2), QK1 & QV2 AC power accessories, QKore 1 & 6 with QKore Wires, Titanium and Bronze Sort Kones, Sort Lifts; Tweek Geek Dark Matter Stealth power conditioner with High Fidelity and Furutech options; AudioQuest Niagara 5000 power conditioner & NRG Edison outlets & JitterBugs; GreenWave AC filter; Marigo Aida CD mat; Stein Music Super Naturals, Signature Harmonizers, Blue Suns/Diamonds, Quantum Organizer; Bybee Room Neutralizers; Absolare Stabilians; Resolution Acoustics room treatment; Stillpoints Aperture panels.

Room 20'L \times 16'W \times 9'H. — Jason Victor Serinus

measurements, continued

was extremely low, though different amounts of aliased image energy appeared in the audioband depending on which filter was in use. This can be seen with the slow-rolloff Filter 2, for example (fig.13), though the levels of the spuriae are still extremely low.

Fig.13 Gryphon Ethos, Filter 1, HF intermodulation spectrum (DC-30kHz), 19+20kHz at OdBFS into 100k ohms (left channel blue, right red; linear frequency scale).

With Jason's preferred Filter 4, there are no aliased images present in the audioband (fig.14).

Finally, when I tested the Gryphon Ethos with 16-bit J-Test data (fig.15), all the odd-order harmonics of the LSBlevel, low-frequency squarewave lie at

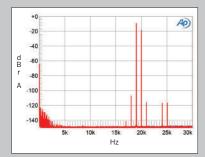


Fig.14 Gryphon Ethos, Filter 4, HF intermodulation spectrum (DC-30kHz), 19+20kHz at 0dBFS into 600 ohms (left channel blue, right red; linear frequency scale).

the correct levels (sloping green line). No sidebands can be seen.

The Gryphon Ethos offers excellent audio engineering, though its sonic character will be dependent on which reconstruction filter is in use.

—John Atkinson

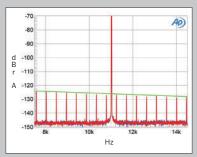


Fig.15 Gryphon Ethos, high-resolution jitter spectrum of analog output signal, 11.025kHz at -6dBFS, sampled at 44.1kHz with LSB toggled at 229Hz: CD data (left channel blue, right red). Center frequency of trace, 11.025kHz; frequency range, ±3.5kHz.