

ROBERT SCHRYER

# Grandinote Shinai

## INTEGRATED AMPLIFIER

I was doing my press beat for *Stereophile* in the hallway of Montreal's 2019 Audiofest when I glimpsed something that stopped me in my tracks. It was a marketing slogan, across the room on importer/exhibitor Goerner Audio's floorstanding banner: "Tubes or semiconductors? Magneto-solid technology amplifies emotions."

Intrigued and with pen and paper in hand, I settled into one of the listening chairs and soaked in the smooth, luscious, musical sound coming from a system with the Grandinote Shinai integrated amplifier at its core—and wondered: tubes or transistors? The line was blurry.

I'd never heard of Grandinote, whose electronics have an unobtrusive, elegant look that sets them apart from the typical fare. The man helming the room—Goerner Audio's amiable Reinhard Goerner—clued me in. Designed and manufactured in Italy, Grandinote products are exported to 32 countries. The Shinai is a special breed of integrated: a solid-state amplifier that uses a tube-based circuit.

I have since heard Grandinote products demoed at two other shows. At the last of these, Toronto's 2019 Audiofest, the Grandinote integrated was being fed music files from a Grandinote server, feeding in turn the unusual, sensitive, crossoverless Grandinote Mach 9 loudspeakers. I wrote,<sup>1</sup> "My journalistic objectivity be darned! The Goerner Audio/Grandinote room produced the sort of sound that melts my heart, ravishes my senses, and reminds me of why great hi-fi is worth the money."



**The Shinai sounds like its own thing, worthy in its own right.**

### Max Magri

Grandinote founder and product designer Massimiliano Magri—Max to his friends—grew up in a small town in northern Italy's Lombardy

region in the province of Pavia, whose namesake capital city, in 452 CE, was sacked by Attila the Hun.

As a child, Magri told me, he played a game where he tied links of string between pieces of furniture to simulate an electrical circuit. A few years later, he had earned a degree in electronic engineering from the University of Pavia, less than an hour's drive from Milan, and had built his first am-

<sup>1</sup> See [stereophile.com/content/grandinote-server-integrated-amplifier-and-speakers-nordost-cabling](http://stereophile.com/content/grandinote-server-integrated-amplifier-and-speakers-nordost-cabling).

## SPECIFICATIONS

**Description** Fully balanced, zero-feedback, direct-coupled, solid-state, dual-mono stereo integrated amplifier with class-A output stage. Inputs: 2 single-ended (RCA), 2 balanced (XLR; these may be converted to unbalanced inputs). Outputs: 1 pair loudspeaker outputs.

Output power: 37Wpc into 8 ohms (15.7dBW) and 4 ohms (12.7dBW). Damping factor >150. Frequency range: 2Hz–240kHz.

**Dimensions** 12.5" (318mm) W × 7.7" (196mm) H × 18.6" (473mm) D. Weight: 88lb (40kg).

**Serial number of unit**

**reviewed** 0088. Manufactured in Italy. **Price** \$15,000. Approximate number of US dealers: 6.

**Manufacturer** Grandinote S.R.L.S., Via Mangiarotti, 20, Bressana Bottarone, 27042, Italy. Tel.: +39 (348) 6701291. Web: [grandinote.it](http://grandinote.it).

Email: [grandinote@gmail.com](mailto:grandinote@gmail.com). Facebook: [facebook.com/grandinote](https://www.facebook.com/grandinote). North American distributor Goerner Audio, 91 18th Ave., Deux-Montagnes, Québec, J7R 4A6, Canada. Tel: +1 (514) 833-1977. Web: [goerneraudio.com](http://goerneraudio.com).



plifier, a tubed unit that featured his first output transformer.

Output transformers became one of Magri's fascinations. In time, he decided it's the most critical part in an amplifier, because of how hard it is to build a really good one and because it's the interface between the amplifier and the speaker. I asked him if that meant that it was the most critical part, soundwise. His answer: Context matters. *Design* matters. "It's stupid to think that the best output transformer is the secret sauce. It's like the guys who buy the most expensive drivers and think they make the best speakers. Both the drivers in the speaker, and the output transformer in the amplifier, need to work for a specific project."

Magri's studies of output transformers would be the foundation for his invention, at age 29, of "Magnetosolid technology," a portmanteau of "ferromagnetic" and "solid-state." The invention led to a transformer made to work with a tubed circuit, minus the tubes, that could deliver the high bandwidth, low impedance, and bass solidity of a solid-state circuit but also the rich tone tube designs are known for. That richness, he was convinced, was due not to the tubes themselves but to tube circuits that abide by the same simpler-is-better ethic that informs the design of the Grandinote Shinai.

### The Shinai

The Shinai is an integrated, push-pull, dual-mono amplifier specified to deliver 37Wpc into both 4 and 8 ohm loads, entirely in class-A.

How dual mono is it? It is *so* dual mono that a power cord is needed for each channel. *Ba-da-tish!*

The stylish, flat-surfaced front panel has no protruding toggles or knobs—just a symmetric array of seven pushbuttons: three on the left for inputs and programming, three on

the right for volume setting, and a big one in the middle, at the bottom, to power the unit on and off.

Negative feedback? "As long as I am Grandinote boss," Magri said, "feedback will be prohibited like sincerity in politics." He is proud of the Shinai's low impedance and high damping factor—the highest in the world, he claims, for an amplifier that uses no negative feedback. It's a feat he credits for delivering what his company's website describes as "control in the bass frequencies that tubes can't dream!!!"

The Shinai is fully balanced, although two of its four (line-level) inputs are single-ended, with RCA connectors. Each of its four direct-coupled stages uses two transistors, and—get this—each transistor has its own power supply. (How many power supplies does the Shinai have? It depends on how you count. There are two power cords and two transformers—one for each channel. Each transformer has five secondaries. Those 10 secondaries feed 32 circuits, each with its own energy storage, filtering, and regulation.) This configuration "is very important for the three-dimensionality of the sound and the location of every instrument in space," Magri said.

The Shinai's 16-page manual is written in the same charming, occasionally frustrating Anglo-Italian dialect found on Grandinote's website. You must visit the website to download it; it isn't in the box. What *is* in the box is a sleek, solid-billet aluminum remote control handset. Plus the amplifier itself, and two power cords.

### Setup

I substituted the Shinai for an Antique Sound Lab mono amp at the top of my rack. I connected two sets of RCA cables—one from my phono stage, the other from my DAC. The Shinai was connected via two power cords—I used

## MEASUREMENTS

I measured the Grandinote Shinai using my Audio Precision SYS2722 analyzer (see the January 2008 "As We See It"). Before doing any testing, I preconditioned the amplifier by following the CEA's recommendation of operating it at one-eighth the specified power into 8 ohms for 30 minutes. At the end of that time, while the black-finished chassis was warm, at 89°F (31.7°C), the chrome grille on the top panel that covers the internal heatsinks was very hot, at 125.8°F (52.1°C). I then performed the older FTC/IHF thermal stress test by running the amplifier at one-third the specified power into 8 ohms for an hour. At the end of that time, the chrome grille's temperature was a little cooler at 123.3°F (50.8°C). As the Shinai biases its output devices into class-A, it actually runs hottest with no signal and coolest at high powers. The amplifier has sufficient heatsinking capacity, but users should make sure it has plenty of ventilation.

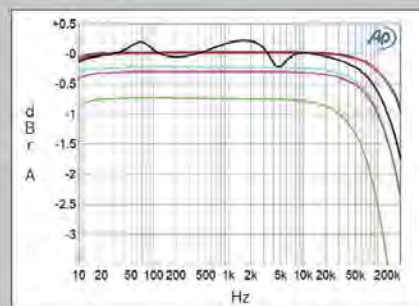
The voltage gain at 1kHz into 8 ohms with the volume control set to its maximum setting ("33") was 31.6dB from the single-ended inputs and 6dB lower from the balanced inputs. The amplifier preserved absolute polarity (ie, was noninverting) with both input types. The volume control operated in accurate 1dB steps, and the Mute button applied a full mute. The single-ended input impedance was a usefully high 42.5k ohms at low and middle frequencies, dropping to 29.1k ohms at the top of the audioband. The balanced input impedance was twice these values at 20Hz and 1kHz but 68.8k ohms at 20kHz.

The Grandinote's output impedance, including the series impedance of 6' of loudspeaker cable, was relatively high for a solid-state design, at 0.24 ohm at 20Hz and 1kHz, increasing very slightly to 0.265 ohm at 20kHz. The modulation of the amplifier's frequency response, due to the Ohm's law interaction between this source impedance and the impedance of our standard

simulated loudspeaker,<sup>2</sup> reached  $\pm 0.25$ dB (fig.1, gray trace). The response into pure resistive loads, taken with the volume control set to its maximum, was flat to 20kHz and rolled off above the audioband, reaching -0.8dB at 200kHz into 8 ohms (fig.1, blue and

<sup>1</sup> See [stereophile.com/content/measurements-maps-precision](http://stereophile.com/content/measurements-maps-precision).

<sup>2</sup> See [stereophile.com/content/real-life-measurements-page-2](http://stereophile.com/content/real-life-measurements-page-2).



**Fig.1** Grandinote Shinai, frequency response at 2.83V into: simulated loudspeaker load (gray), 8 ohms (left channel blue, right red), 4 ohms (left cyan, right magenta), 2 ohms (green) (0.5dB/vertical div.).



LessLoss DFPCs—to my Shunyata Venom 8 power conditioner, which itself was connected to a dedicated 20A electrical line via a Shunyata Research Black Mamba CX power cord.

The Shinai drove, alternately, the recently reviewed Totem Skylights,<sup>2</sup> my KEF LS50s, and a pair of mystery speakers I'll get to later.

### Listening

I started with an album that, as I later learned, Reinhard and I both routinely use to set up speakers: Roger Waters's *Amused to Death* (CD, Columbia CK 47127). It was mixed using QSound's "3D binaural" technology, which generates two-channel audio with 3D effects from multiple mike feeds. Get the imaging right, and the rest falls into place.

With all the speakers I used, the album's fade-to-white cricket-chirping intro filled more of the room than I was used to with my own electronics. It was as if a world was materializing around me, like I was gaining consciousness in the middle of a field on a hot day. Soon, every pore of the soundstage seemed filled with animated sound. The Shinai made aural space microscopically tangible.

The Shinai has a knack for detail retrieval, an attribute I've been fond of ever since, as a skinny, bespectacled 7-year-old, I got my hands on a magnifying glass, roamed a park on a burgeoning spring day, and learned I had a taste for close-up visualization. Here, though, what I was hearing was less about detail for detail's sake than it was about getting



a clearer view of the big picture. Imagine drawing your eyes away from a blurry photograph until its image crystallizes and you'll have a better idea of what I was hearing.

The Shinai gave notes and musical lines enough space to stretch out and seamlessly transition into the next notes and musical lines. At the start of *Amused to Death*'s second track, "What God

Wants," the expanding resonance created by each strike of the floor tom served as a screenlike backdrop against which other sounds were projected. And when the drums kicked in to launch the band, they *kicked!* It was easy to forget I was listening to standmount speakers.

The Shinais didn't gloss over the glare that's part of the sound of many early CDs, but it emphasized the good, in the recording and the system, including the more pleasing attributes of each speaker I was using: the Totems' pristine focus and color; the KEFs' room-filling lower-midrange.

Whenever I listen to Alice Coltrane's *Journey in Satchidananda* (LP, Impulse! IMP-228), with its mantra-like jazz incantations, I imagine I'm in India, barefoot, at the ashram of Maharishi Mahesh Yogi, who is disappointed in me for doing LSD. (Apparently in my daydreams I am the Beatles, whose drug use at the ashram displeased the yogi.) There's a slight claustrophobic feel to the album's sound, a darkish

<sup>2</sup> See [stereophile.com/content/totem-acoustic-skylight-loudspeaker](http://stereophile.com/content/totem-acoustic-skylight-loudspeaker).

### measurements, continued

red traces),  $-0.75\text{dB}$  at  $100\text{kHz}$  into 4 ohms (cyan, magenta), and  $-2\text{dB}$  at  $100\text{kHz}$  into 2 ohms (green). Note the excellent channel matching and that, commendably, the response didn't change appreciably at lower settings of the volume control. These responses were taken with the balanced inputs; the unbalanced inputs were also flat to  $20\text{kHz}$  but started rolling off a little earlier at ultrasonic frequencies. At the other end of the spectrum, the single-

ended inputs' response was down by  $1.4\text{dB}$  at  $10\text{Hz}$ . The extended ultrasonic response was responsible for the amplifier's excellent reproduction of a  $10\text{kHz}$  squarewave (fig.2).

As expected from the dual-mono construction, channel separation was excellent:  $>100\text{dB}$  in both directions below  $3\text{kHz}$ . Measured with the unbalanced inputs shorted to ground and the volume control set to its maximum, the wideband, unweighted signal/noise

ratio (ref.  $2.83\text{V}$  into 8 ohms) measured a very good  $79.4\text{dB}$  (average of both channels). Restricting the measurement bandwidth to  $22\text{kHz}$  increased the ratios to  $86.6\text{dB}$ , left, and  $83.1\text{dB}$ , right, and an A-weighting filter increased them further, to  $93.0\text{dB}$ , left, and  $87.8\text{dB}$ , right. Spectral analysis of the Grandinote amplifier's low-frequency noise floor (fig.3) revealed that spurious related to the AC power-line frequency were low in level; the  $180\text{Hz}$  component

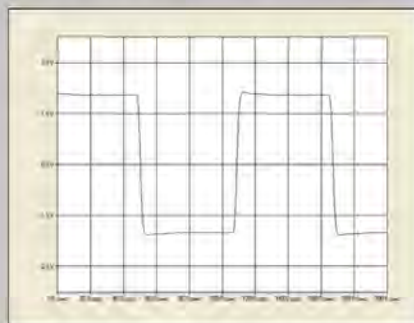


Fig.2 Grandinote Shinai, small-signal,  $10\text{kHz}$  squarewave into 8 ohms.

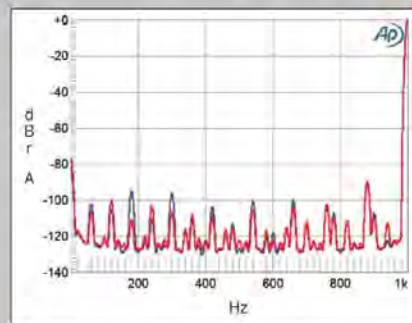


Fig.3 Grandinote Shinai, spectrum of  $1\text{kHz}$  sine-wave, DC- $1\text{kHz}$ , at  $1\text{W}$  into 8 ohms (left channel blue, right red; linear frequency scale).

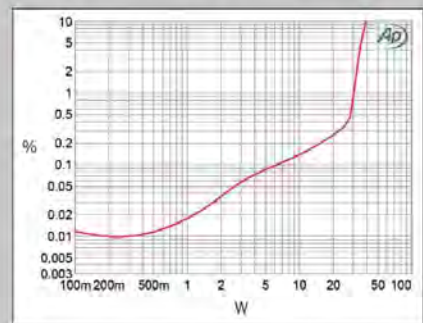


Fig.4 Grandinote Shinai, distortion (%) vs  $1\text{kHz}$  continuous output power into 8 ohms.



character made darker by a fat-bass undertow, some parts of which, through my tubed setup, might as well be whale farts for all their finesse.

The Shinai mostly degassed those farts, rendering them drier than I'm used to, more defined and solid, with better attack. Sorry.

That same quality coaxed other sounds through the mix to a scintillating, 3D landscape of percussion, string, and wind sounds. I could make out individual jingles on certain tambourine shakes, like singers in a choir.

Despite such detail, the Shinai didn't sound clinical or etched. Rather, the impression I had was simply that the speaker cones were completely under the Shinai's control. Nothing sounded sloppy, short-changed, or superfluous.

Next, I put on Frank Zappa's *Apostrophe (†)* (LP, Barking Pumpkin Records ZR 3851), which is full of syncopated rhythms, virtuoso musicianship, and slapstick stories delivered by electric guitar, bass, drums, percussion, violin, keyboards, trumpet, trombone, a single sound (*whaaaaaang!!!*) from a cello (apparently *not* played by Jack Bruce, who instead was on bass)—and, of course, Frank Zappa's and his backup singers' mouths.

The Shinai delivered these disparate elements and their sonic offshoots like a Cirque du Soleil juggler, with poise and panache. It proved two things: That this album, mastered from the original 1/4" stereo analog master tape by Chris Bellman at Bernie Grundman Mastering, is an aural funhouse, and that the Shinai is up to the task of revealing *all* the virtues of a top-tier recording.

I had similarly excellent results with the second track from Montreal-based jazz-soul singer Dominique Fils-Aimé's *Nameless* (LP, Ensoul Records)—but not the first track, which lacks the corporeality and intimacy that make

the second track so compelling. Shinai amplification helped make the disparity between these two tracks remarkably clear: The first song I couldn't finish, the second I didn't want to end.

In the mood for another female singer, I played Patricia Barber's *Companion* (CD, Premonition/Blue Note 5 22963 2), a live 1999 recording of a performance, engineered by Jim Anderson, at Chicago's famous jazz club, the Green Mill, where Barber held forth most Monday nights (in more normal times). Again, I heard things that were new to me, such as the slight delay Barber applies before hitting a piano note, and, less tangible but palpable, how her rhythm section plays off her, following her every note. The Shinai transmitted not just sound but subtle people-in-a-band cues and dynamics.

The shakes, taps, plucks, bends, snaps—the whole sonic business of the music-making—were in full swing, explicitly manifested. Human-instrument interactions were intricate, yet easy to follow. The LS50s blew fingerprint dust on dark recesses, sketching angles, corners, and objects in gray shades. I sensed I could see where audience members were seated and their proximity to the band. At times, I felt as if I was there with them.

I had one last test in mind. I wanted to hear the Shinai with bigger, more ambitious speakers. Reinhard delivered his personal pair of the Austrian-made WLM Diva Mk 4 floorstanders (approx. \$15,000/pair US),<sup>3</sup> with claimed sensitivity of 95dB into 8 ohms and frequency range of 30Hz–20kHz. The Diva Mk 4 uses a concentric driver for the midrange and tweeter and an 8" woofer for the lows. Reinhard set them up using a mathematical formula passed on to him years ago by Audio Physic founder Joachim

<sup>3</sup> See Art Dudley's report from the 2017 Montreal Audiofest at [stereophile.com/content/arts-saturday-morning-show](http://stereophile.com/content/arts-saturday-morning-show).

#### measurements, continued

was a little higher in the left channel (blue trace) than the right (red). The component at 880Hz (1000–120Hz) was the highest in level in both channels, at -90dB ref. 2.83V (0.003%).

The Grandinote Shinai is specified as delivering 37Wpc, with no load impedance or distortion level mentioned.<sup>3</sup> At our usual definition of clipping, which is when the THD+noise reaches 1%, with both channels driven

the Grandinote delivered 30Wpc into 8 ohms (fig.4, 14.8dBW) and 36Wpc into 4 ohms (fig.5, 12.55dBW). Relaxing the criteria to 3% THD+N, the Shinai clipped at 34Wpc into 8 ohms (15.3dBW) and at 54Wpc into 4 ohms (14.3dBW). Into 2 ohms, even with just one channel driven, it reached 1% THD+N at 15W (5.75dBW), and though actual waveform clipping was relatively mild below 70W into 2 ohms,

the THD+N remained between 2% and 3% between 20W and 70W.

I measured how the THD+N percentage changed with frequency at 6.33V, which is equivalent to 5W into 8 ohms, 10W into 4 ohms, and 20W into 2 ohms. Other than in the low bass, the distortion levels were consistent with

<sup>3</sup> In an interview, designer Massimiliano Magri told Rob Schryer that the maximum output power is the same—37W—into 8 or 4 ohms.—Editor

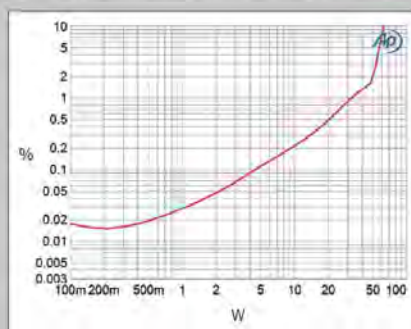


Fig.5 Grandinote Shinai, distortion (%) vs 1kHz continuous output power into 4 ohms.

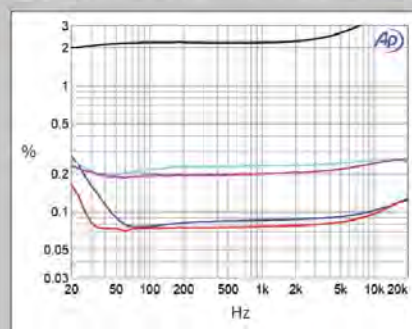


Fig.6 Grandinote Shinai, THD+N (%) vs frequency at 6.33V into: 8 ohms (left channel blue, right red), 4 ohms (left cyan, right magenta), and 2 ohms (gray).

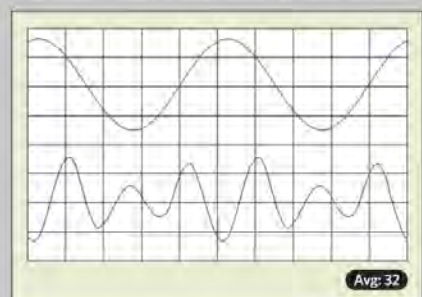


Fig.7 Grandinote Shinai, 1kHz waveform at 10W into 8 ohms, 0.14% THD+N (top); distortion and noise waveform with fundamental notched out (bottom, not to scale).



Gerhard, which states that the distance between the speakers should be 1.2 times the distance between the tweeters and the listener. From there, adjust according to obsessiveness.

With the WLMs set up, I tried out larger-scale recordings: King Crimson's *In the Court of the Crimson King* (CD, EG Records, EGCD 1, 0777 7 86485 2 9), Itzhak Perlman's *The Perlman Sound* (LP, Warner Classics 0825646070985), and the *Bartók Violin Concerto No.2* conducted by Antal Doráti (LP, Mercury Records SR90003). With each of those recordings, the Shinai and the WLMs mated like lovers, infusing the sound with more space, glare-free highs, and as much depth of field as an Austrian pasture. I don't know how well the Shinai drove the WLMs compared to other amplifiers; I only know that this was a great-sounding combination.

### Conclusion

I believe that the best pieces of hi-fi have a spirit. The Shinai is no exception.

It has the spirit of a revealer. It speaks the truth—not ruthlessly, but honestly. It showed me, with conspicuous clarity, the sonic differences among music formats, speaker models, song-to-song recording quality, that section on an LP where, on my rig, the sound seemed to have spontaneously gotten much better, and the Shinai's own conspicuous improvement after 45 minutes of playing music. More importantly, it revealed myriad strains of musical information I'd not known were there.

It also forced me to face up to the fact that my tubed electronics were sweetening and homogenizing the sound.

Does the Shinai's tube-based circuitry make it sound like a tube amp? Not exactly. The Shinai sounds like its *own* thing, worthy in its own right. It's rich but not in the voluptuous,

## ASSOCIATED EQUIPMENT

**Analog sources** Rega P5 turntable with RB700 tonearm and Audio MushiKraft Denon DL-103 cartridge.

**Digital sources** Simaudio Moon 260D transport, Bryston BDP-1 USB Digital Player running Tidal, Bryston BDA-2 DAC.

**Preamplification** Sonic Frontiers SFP-1 Signature phono preamp.

**Loudspeakers** KEF LS50, Totem Skylight, WLM Diva Mk 4.

**Cables** Digital: AudioQuest Diamond (USB), BIS Audio Maestro (RCA). Interconnect: Moon Audio Silver Dragon (RCA). Speaker: Nordost Heimdall. Power: Shunyata Research Black Mamba CX, LessLoss DFPC.

**Accessories** Shunyata Research Venom PS8 power conditioner, a component rack and wood plinth stand (under turntable) whose brand names are lost to time.

—Robert Schryer

warm way of my combo of Audible Illusions preamp and vintage ASL monos. The Shinai is more neutral sounding.

The Shinai did some things better than my tube gear—definition, detail, space, scale, touch—at a price I think fair considering that, for the money, one gets a line stage and two powerful-sounding (even if rated at just 37Wpc), class-A monoblocks, designed and hand-built in Italy.

I'm a tube lover but, were I looking to buy an integrated amplifier, the Shinai would be a contender as long as I had the ancillary components to do it justice. Feed it well, and it will reward you in equal measure. ■

### measurements, continued

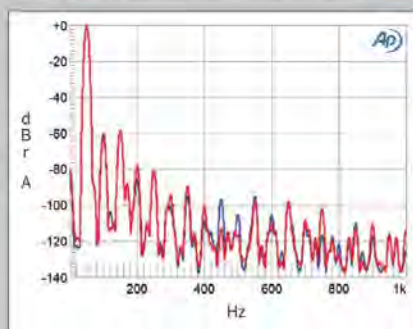
frequency (fig.6) but increased significantly as the load impedance halved. The gray trace in this graph shows the behavior into 2 ohms; I would not recommend using this amplifier into such a demanding load.

The shape of the THD+N spuriae waveform at moderate power into 8 ohms (fig.7, bottom trace) suggests that the distortion signature predominantly consists of the subjectively innocuous second and third harmon-

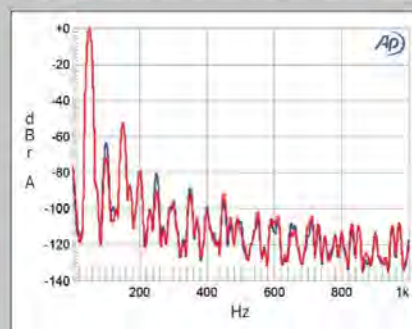
ics. This was confirmed by spectral analysis (fig.8), though higher-order harmonics can be seen at or below -80dB (0.01%). At the same power into 4 ohms (fig.9), the third harmonic dominates, though the higher-order harmonics don't get any higher in level. With its bent transfer function, the Shinai did only okay with an equal mix of 19kHz and 20kHz tones, the combined waveform peaking at 10W into 8 ohms (fig.10). The second-order difference

product lay at -70dB (0.03%) with higher-order intermodulation products a little higher in level.

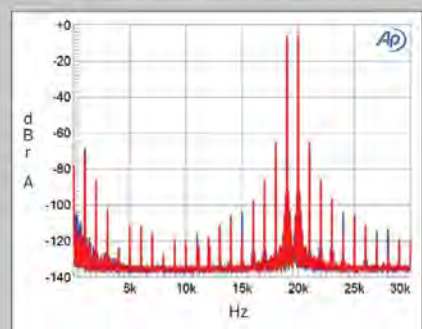
The Grandinote Shinai's measured performance is dominated by the designer's decision not to use negative feedback. I would expect the Shinai's sonic character therefore to be similar to that of a typical tube amplifier. I don't recommend using this amplifier with loudspeakers whose impedance drops much below 4 ohms. —John Atkinson



**Fig.8** Grandinote Shinai, spectrum of 50Hz sine wave, DC-1kHz, at 10Wpc into 8 ohms (left channel blue, right red; linear frequency scale).



**Fig.9** Grandinote Shinai, spectrum of 50Hz sine wave, DC-1kHz, at 10Wpc into 4 ohms (left channel blue, right red; linear frequency scale).



**Fig.10** Grandinote Shinai, HF intermodulation spectrum, DC-30kHz, 19+20kHz at 10Wpc peak into 8 ohms (left channel blue, right red; linear frequency scale).