

# Soulution

## 710

MICHAEL FREMER POWER AMPLIFIER

**DESCRIPTION** Solid-state, two-channel power amplifier. Maximum output power, both channels driven, 20Hz–20kHz, at <0.1% THD: 130Wpc into 8 ohms (21.1dBW), 260Wpc into 4 ohms (21.1dBW), 440Wpc into 2 ohms (20.4dBW). Maximum current output: 60A peak per channel. Frequency response: DC–1MHz, –3dB. THD+N: <0.0007% at 50Wpc into 8 ohms. Voltage gain: +26dB. Input impedance: 4.8k ohms (XLR), 10k ohms (RCA). Signal/noise ratio: 107dB (no ref. level given). Damping factor (100Hz): >10,000. Power/current consumption at idle: ca 200W.

**DIMENSIONS** 21" (535mm) W by 10.9" (277mm) H by 18.7" (480mm) D. Weight: 176 lbs (80kg).

**SERIAL NUMBER OF UNIT REVIEWED** 710-0201.

**PRICE** \$45,000. Approximate number of dealers: 5.

**MANUFACTURER** Soulution, Spemot AG, Industriestrasse 70, CH-4657 Dulliken, Switzerland. Tel: (41) 62-285-30-40. Fax: (41) 62-295-52-02. Web: [www.soulution-audio.com](http://www.soulution-audio.com). US distributor: Axiss Audio, 17800 S. Main, Suite 109, Gardena, CA 90248. Tel: (310) 329-0187. Web: [www.axissaudio.com](http://www.axissaudio.com)



**T**hat is not a typo. The company is named Soulution—as in soul commitment to designing and manufacturing the finest audio gear it knows how, as in souldiering on in the face of skeptics who can't imagine why a power amplifier that puts out 130Wpc into 8 ohms or 260 into 4 ohms should cost \$45,000, or weigh as much as a small pickup truck.

All of that is old news for some readers. For the rest, Soulution is the unlikely offshoot of Spemot, a 56-year-old company based in Dulliken, Switzerland, that manufactures specialty electric motors for the automotive industry (BMW, Volkswagen) and for use in power tools, industrial air-conditioners, and what appear to be personal grooming devices for farm animals. Spemot also manufactures a kitchen appliance—an ice-maker of sorts used by professional chefs who specialize in “molecular gastronomy.” It can make mousse from lox—but that’s a discussion for the Food Network.

There’s an old joke: “How do you end up with \$2 million in high-performance audio? Start with \$4 million!” In the case of Spemot’s principals, Cyrill Hammer and Roland Manz, their long voyage in these treacherous waters seems to be paying off. Spemot’s ultra-expensive, highly engineered audio products, first marketed in 2006, have found a devoted following, first among well-heeled Asian and German audiophiles and now throughout the world.

Longtime passionate audiophiles, Hammer and Manz had, since 1997, imported to and distributed in Switzerland the Audiolabor electronics from Germany, among other brands (Turntable maven Helmut Brinkmann was one of Audiolabor’s founders). When Audiolabor became inactive, Hammer and Manz hired its chief audio designer,



Christopher Schürmann, who, over a five-year period, began implementing Hammer and Manz's mandate to design cost-no-object components, eventually to their satisfaction.

While Souolution is a relatively young company, it's built on the foundation of a long-successful one that will stand behind and support the product. That's good to know when you're forking over \$45,000 for a moderately powered solid-state amplifier—though of course we all know of amps that cost over \$100,000 and output but a few watts.

**Boy, you're gonna carry that weight**

It took three people to move the 176-pound Souolution from its crate to my Finite Element Pagode stand and, at the end of the review period, three others to get it from there into the trunk

of John Atkinson's car. Compounding the weight problem were the rather sharp edges of the integral handles on the Souolution's rear panel.

The look of the boxy, matte-gray case is retro-industrial elegant, enhanced by the

and alerts the user to any fault conditions. (The 710 includes circuits to protect it from clipping, overcurrent, and overheating.) The company name appears below the display, almost as an afterthought, in small letters that look almost typewritten.

**WHILE SOULUTION IS A RELATIVELY YOUNG COMPANY, IT'S BUILT ON THE FOUNDATION OF A LONG-SUCCESSFUL ONE.**

lack of any visible fasteners on any surface. No doubt the Spartan look won't appeal to everyone, but I found it refreshingly understated in a world filled with blue LEDs and gleaming brushed aluminum.

A relatively small orange display on the front panel monitors settings made via the three small buttons to its right,

You can choose balanced or single-ended operation, as well as a remote turn-on option when the 710 is paired with a Souolution preamp. Rear-panel buttons let you choose the startup input and the brightness of the front-panel LEDs.

The rear panel features single-ended WBT RCA and Neutrik balanced XLR

**MEASUREMENTS**

To measure the Souolution 710, I used *Stereophile's* loan sample of the top-of-the-line Audio Precision SYS2722 system (see the January 2008 "As We See It," [www.stereophile.com/content/measurements-maps-precision](http://www.stereophile.com/content/measurements-maps-precision), and [www.ap.com](http://www.ap.com)). I ran the 710 at one-third power into 8 ohms for an hour, which maximally stresses a class-A/B amplifier's heatsinking. At the end of this preconditioning period the amplifier's top panel was only slightly warm, at 90°F (32.2°C).

The voltage gain into 8 ohms was 25.9dB from both the balanced and unbalanced inputs, and both inputs preserved absolute polarity (*ie*, were non-inverting). The XLR jacks are wired with pin 2 hot. The unbalanced input impedance was the specified 10k ohms at all frequencies. However, the balanced input impedance was 2860 ohms, which is both low in absolute terms and significantly lower than the specified 4.8k ohms. Tube preamplifiers with a high balanced source impedance are best avoided, though it is fair to say that such preamps are rare.

The output impedance, including the series resistance of 6' of speaker cable, was very low, at 0.06 ohm at 20Hz and 1kHz, rising to 0.075 ohm at 20kHz. The variation in the amplifier's frequency response, due to the interaction between this impedance and how that of the speaker varies with frequency, is therefore also very low, at ±0.07dB (fig.1, gray trace). Into 8 ohms (blue and red traces), the Souolution 710 offered a very wide small-signal bandwidth—note the superb channel matching in this graph—which correlated with the very short risetimes of the amplifier's reproduction of a 10kHz squarewave (fig.2), though there was the slightest hint of overshoot. The ultrasonic output rolled off a little faster into lower impedances, but even into 2 ohms, the output was still flat within the audioband and down 3dB at 160kHz (fig.1, green trace). The 1kHz squarewave into 8 ohms was about as good as it gets (fig.3).

Channel separation (not shown) was superb, at >110dB below 1kHz and still 84dB in both directions at

20kHz. The Souolution is also a very quiet amplifier, its unweighted, wideband signal/noise ratio measuring 83dB ref. 1W into 8 ohms. Restricting the measurement bandwidth to the audioband increased the S/N ratio to 94dB, and switching in an A-weighting filter further increased

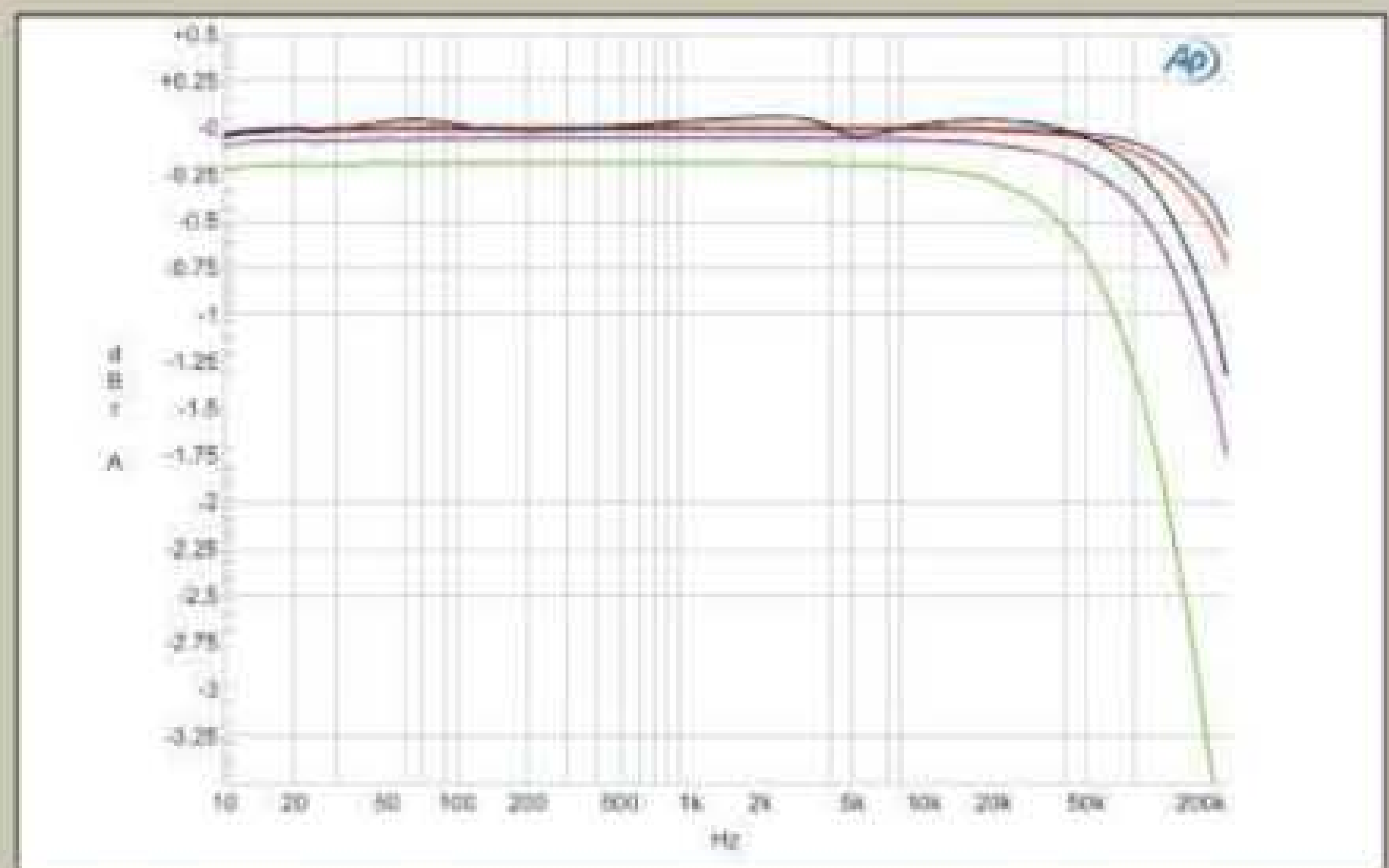


Fig.1 Souolution 710, frequency response at 2.83V into: simulated loudspeaker load (gray), 8 ohms (left channel blue, right red), 4 ohms (left cyan, right magenta), 2 ohms (green). (1 dB/vertical div.)

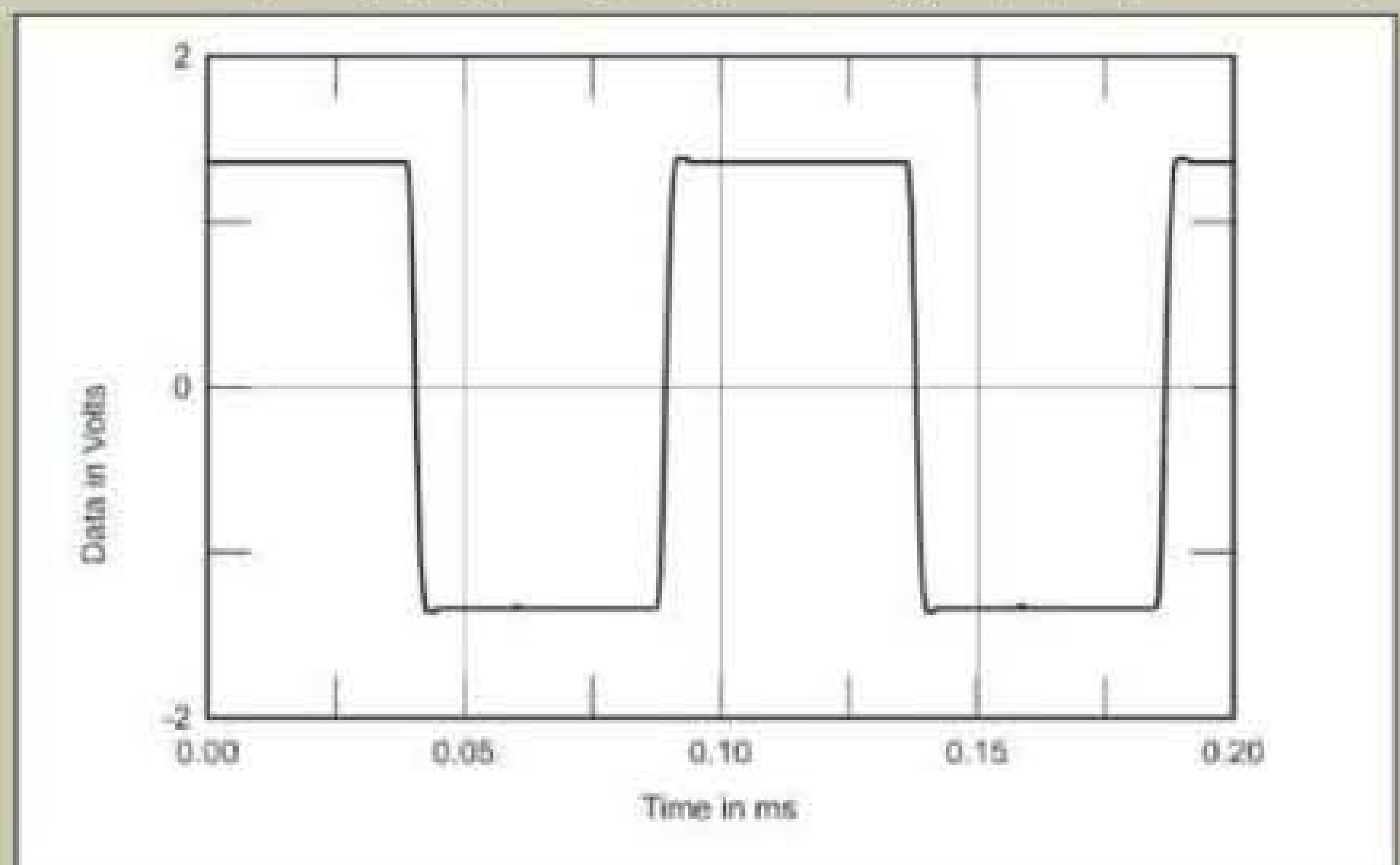


Fig.2 Souolution 710, small-signal 10kHz squarewave into 8 ohms.



inputs for each channel, as well as substantial winged speaker binding posts, access to which is somewhat limited by the handles. Access is also limited to the IEC inlet, which is mounted at a 90° angle to the rear panel on a protrusion that contains the cooling fan. Soullution provides a proprietary AC cord, but if you have a favorite of your own, it might not fit, particularly if it's too stiff to bend at an acute angle.

**What's inside**

Much of the 710's weight is accounted for by two 1000VA toroidal transformers and rectifiers mounted on bus bars of solid copper, to which are connected the capacitors, which supply almost 250,000µF of storage capacity. More weight comes



A silent fan helps the Soullution run cool.

from the heat-dissipating aluminum baseplate, almost half an inch thick, and the rest of the thick, rigid chassis.

This dual-mono, dual-differential design has independent amplifier boards and power supplies. The design architecture emphasizes short signal paths. The inputs are buffered by a stage with a low output, followed first by an "error amplifier," then

by a high-bandwidth, zero-feedback, "fixed-gain buffer" that amplifies the voltage by a factor of 20. That feeds the current amplifier stage, which uses 14 temperature-controlled power transistors affixed to a 6mm-thick copper bus bar, and is capable of delivering 60 amps of peak current. Because of its ultra-

low specified output impedance of 1 milliohm, the 710 could theoretically provide peak current greater than 200 amperes (!), but it's monitored and limited to 60 amps. Another solid bus bar transmits the output to the speaker terminals.

Tight control of the 710's operating temperature is a critical factor in its overall stability, consistency, and ultra-wide bandwidth of DC-1MHz. The design of the Soullution 710 is modular

it, to 96.8dB. The Soullution 710 joins that select group of amplifiers that has sufficient dynamic range to match the best high-resolution recordings.

Despite the very low noise level, any distortion present in the 710's output remains below that noise almost to the point where the amplifier clips. Figs. 4 and 5 plot the percentage of THD+noise against output power at 1kHz into 8 and 4 ohms, respectively; the constant downward slope of the traces in these graphs indicates that the THD+N percentage is dominated by noise. If clipping is defined as when the percentage of THD+N reaches 1%, the Soullution 710 with both channels driven clips at 130Wpc into 8 ohms (21.1dBW) and 218Wpc into 4 ohms (20.4dBW). With just one channel driven, the clipping power was 135W into 8 ohms (21.3dBW), 260W into 4 ohms (21.1dBW), and 490W into 2 ohms (20.9dBW). The amplifier meets or exceeds its specified 130W into 8 ohms and 260W into 4 ohms (both 21.1dBW), but only with one channel driven. This is because I don't hold the wall voltage constant during these tests; it was 121.5V AC with the amplifier quiescent, dropping to 120.1V AC with

the amplifier clipping both channels into 4 ohms or one channel into 2 ohms.

Soullution specifies the THD at 50W into 8 ohms, which is equivalent to 20V, so that is the level at which I plotted the THD+N percentage. The results are shown in fig.6; the

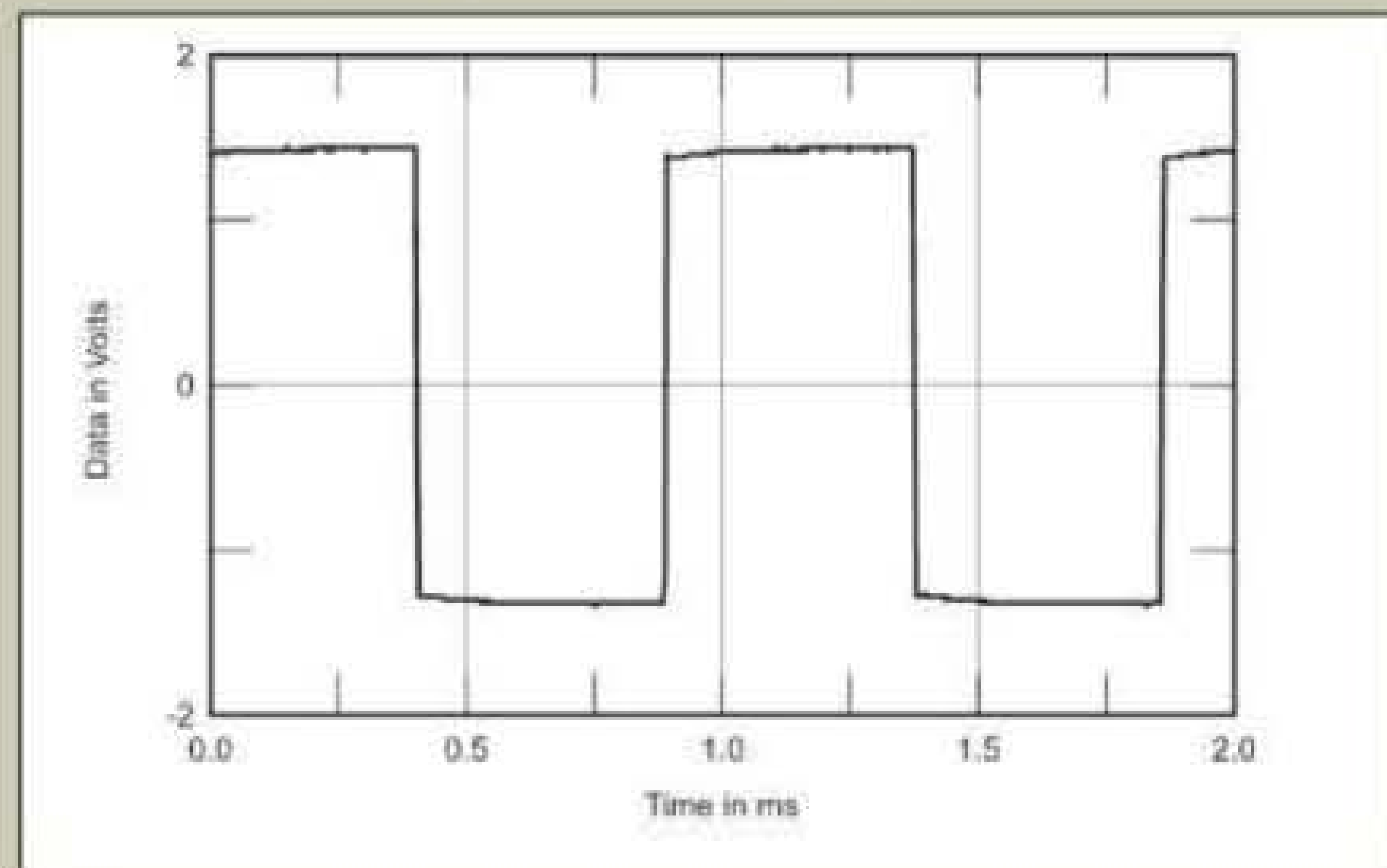


Fig.3 Soullution 710, small-signal 1kHz squarewave into 8 ohms.

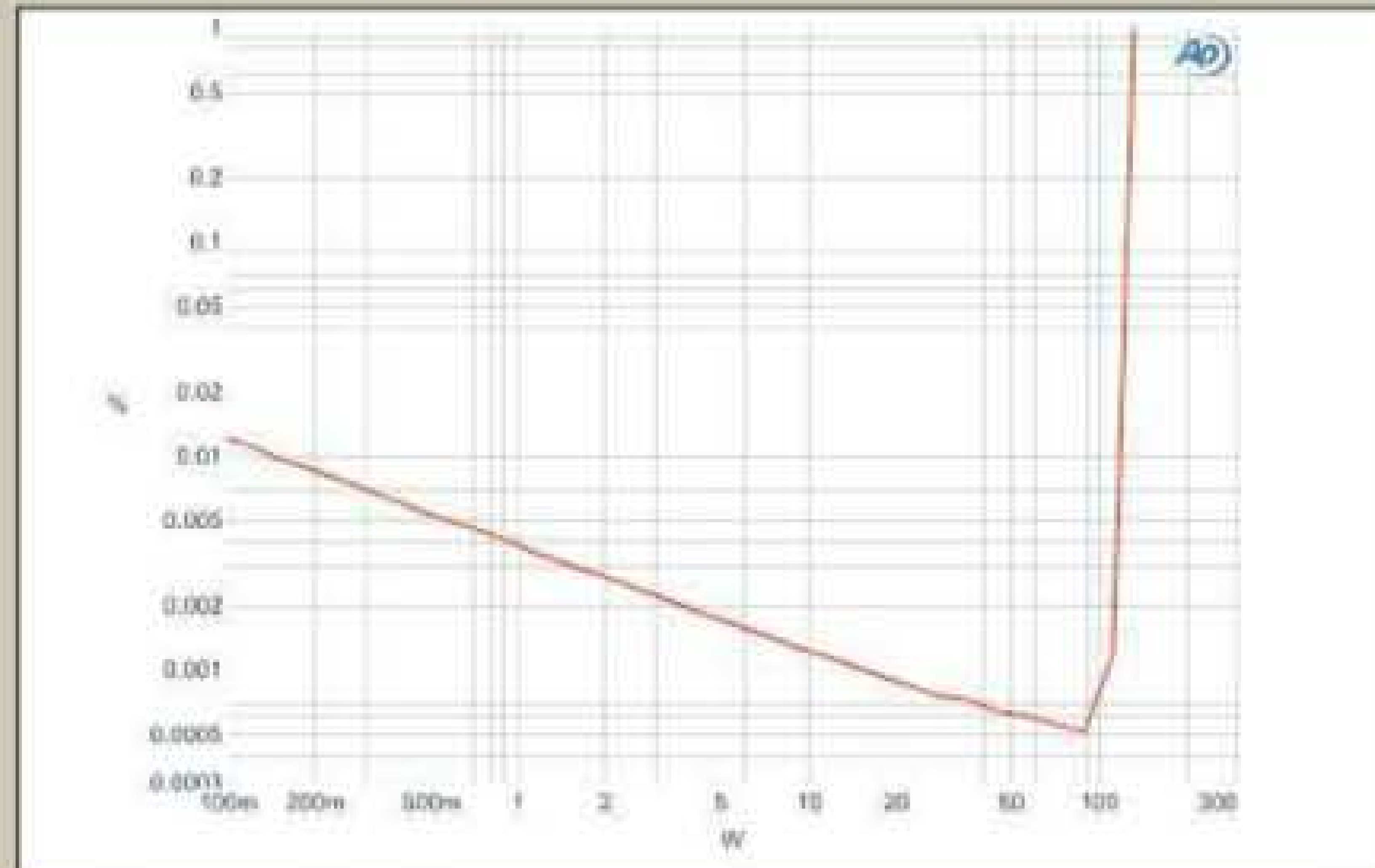


Fig.4 Soullution 710, distortion (%) vs 1kHz continuous output power into 8 ohms.

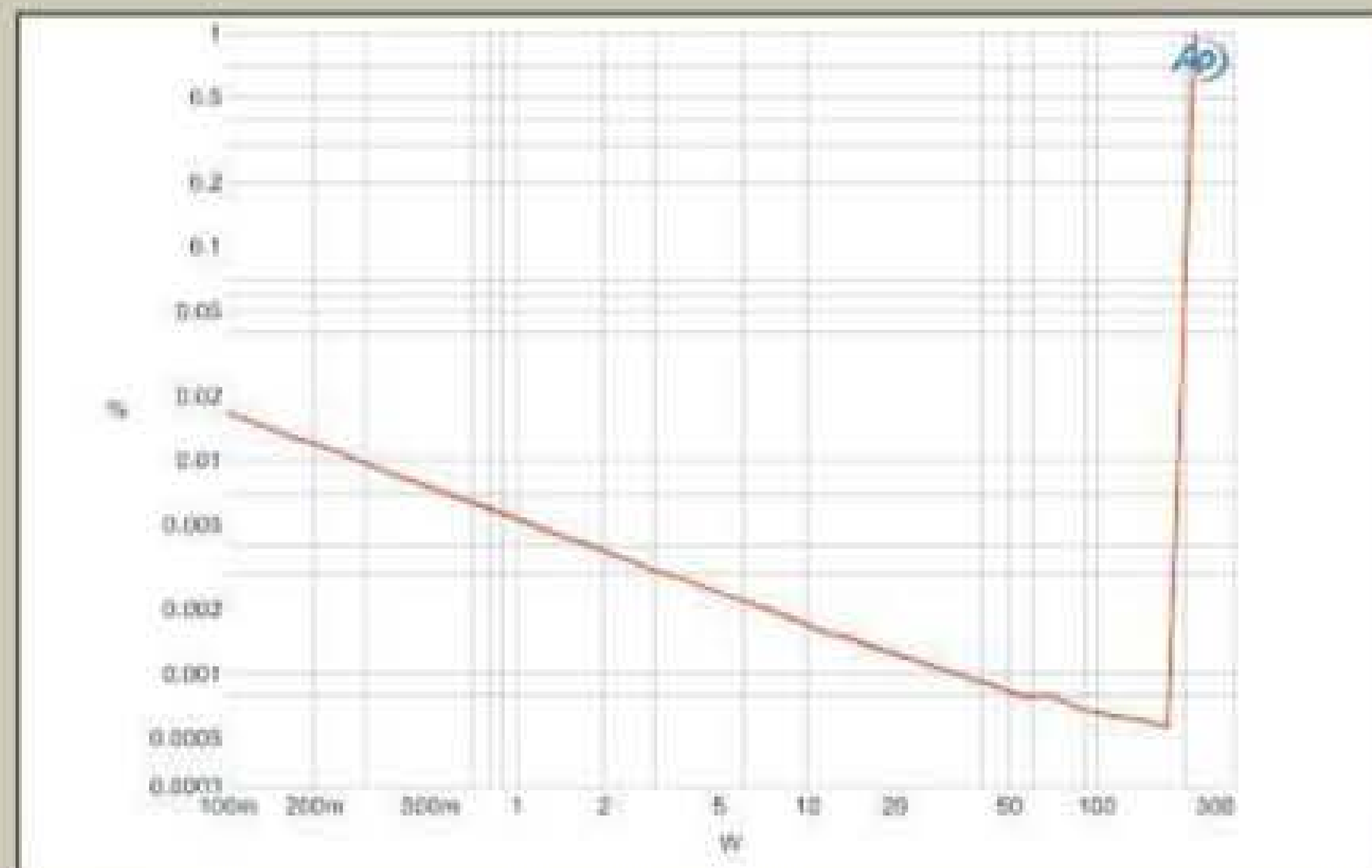


Fig.5 Soullution 710, distortion (%) vs 1kHz continuous output power into 4 ohms.

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and ultra-high-tech, and makes use of modern construction and manufacturing techniques; few wires are evident in the compact, complex layout. That's what \$45,000 gets you physically.

The graphs in the 710's instruction manual illustrate its exceedingly low noise floor: -140dB from 20Hz to 20kHz (it's actually lower throughout most of the audioband), with but a few ultranarrow spikes, the major one at 60Hz and registering a level of -120dB. The 710's frequency-response plot is essentially flat from 20Hz to 100kHz, with a rise of 0.025dB at the top. The claimed frequency response is DC-1MHz, -3dB. The THD+noise vs power (8 ohms) is a mind-bogglingly low 0.00075% up to around 115W, where it rises sharply to a still-negligible 0.1% at the rated 130W or 260W into 8 ohms.

**Soulution pulls a fast one**

But superb measurements don't always yield superb sound. Amplifiers designed to produce vanishingly low distortion can sound cold and uninvolved. That's how I felt about the Halcros. There was no *there* there.

While the Soulution 710's sound won't appeal to everyone, as demonstrated by the reaction of a few visitors here, it will appeal to anyone who values unparalleled transparency, startling transient cleanness, and a level of overall refinement that easily surpassed that of any other amplifier I have heard. The 710 *gripped* my Wilson Audio MAXX 3 speakers as has no other amplifier in my experience, acting and reacting with effervescent speed. A few visitors were reminded of Spectral's overall sound, but I have no experience there.

Usually, the tradeoff in transients is between fast and sharp or slow and

smooth, with the former usually becoming edge and etch, the latter soft and boring—a choice between wet blanket and blocks of carved ice. Settling on something usually requires making sonic peace with one side or the other.

Yet the 710 was faster *and* smoother, and faster *and* sharper, and just plain *fast*. I thought I'd break it in and get acquainted by playing tracks from the Sooloos server using the Playback Designs DAC, expecting the Soulution to sound at first sharp and perhaps a bit ragged. Instead, it immediately seemed to transform "Red Book" CDs, producing an unusual serenity based on the opposite of soft and smooth, and an equally unusual (for me) sense of musical engagement caused by heightened transient clarity and speed—the kind that usually produces a tradeoff resulting in etch and edge, of which there was neither. The speed with which

**measurements, continued**

THD+N in the midrange and bass into both 8 and 4 ohms is an astonishingly low 0.0006%. This does rise at higher frequencies and into 2 ohms, but not to any level that would cause concern.

With a 1kHz signal, I had to raise the output level close to clipping in order to see the distortion spurs (fig.7). These are predominantly third-harmonic in nature, but even after averaging 64 waveform captures, the trace is still overlaid with noise. (The THD+N percentage was just 0.00056%!) The spectrum of the signal is shown in fig.8. The third harmonic is the highest in level, at -114dB (0.0002%), with the second harmonic in the left channel and the fifth in the right lying at -120dB (0.0001%), along with a power-supply component at 120Hz. The Soulution 710 performed equally well on the high-frequency intermodulation test. With an equal mix of 19 and 20kHz tones at a peak level of 85W into 8 ohms (not shown), the 1kHz difference components lay at -120dB!

The following sentence appeared in a review of the Soulution 710 published in October 2005 in the German magazine *Stereo*: "Lab chief technician Rolf Hähle has hung the

test certificate for the Soulution 710 in a golden frame over his measuring desk" I wouldn't go quite that far, but the Soulution 710 is definitely one of the best-measuring amplifiers I have encountered. Color me impressed.

—John Atkinson

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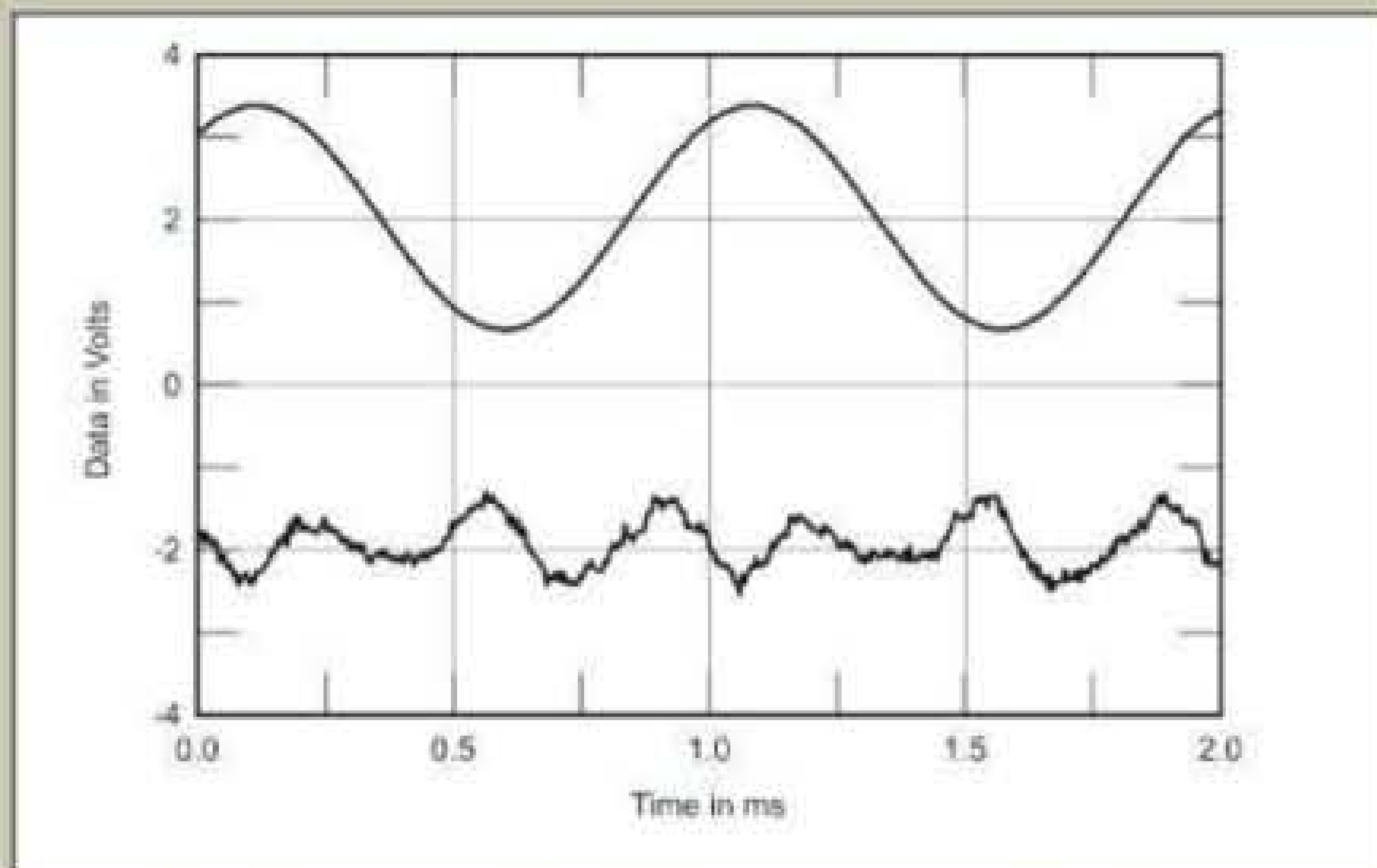


Fig.7 Soulution 710, 1kHz waveform at 101W into 8 ohms (top), 0.00056% THD+N; distortion and noise waveform with fundamental notched out (bottom, not to scale).

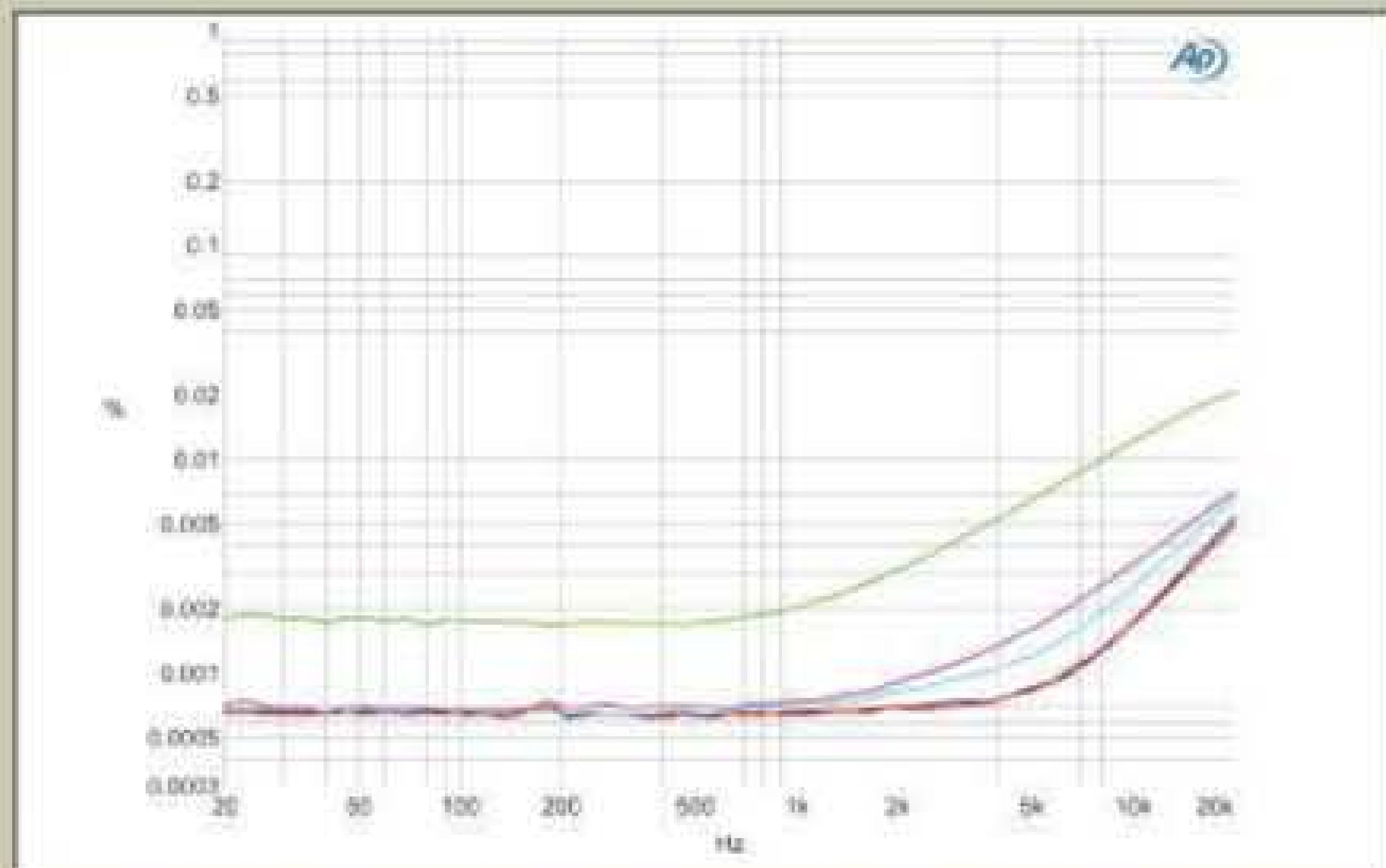


Fig.6 Soulution 710, THD+N (%) vs frequency at 20V into: 8 ohms (left channel blue, right red), 4 ohms (left cyan, right magenta), 2 ohms (green).

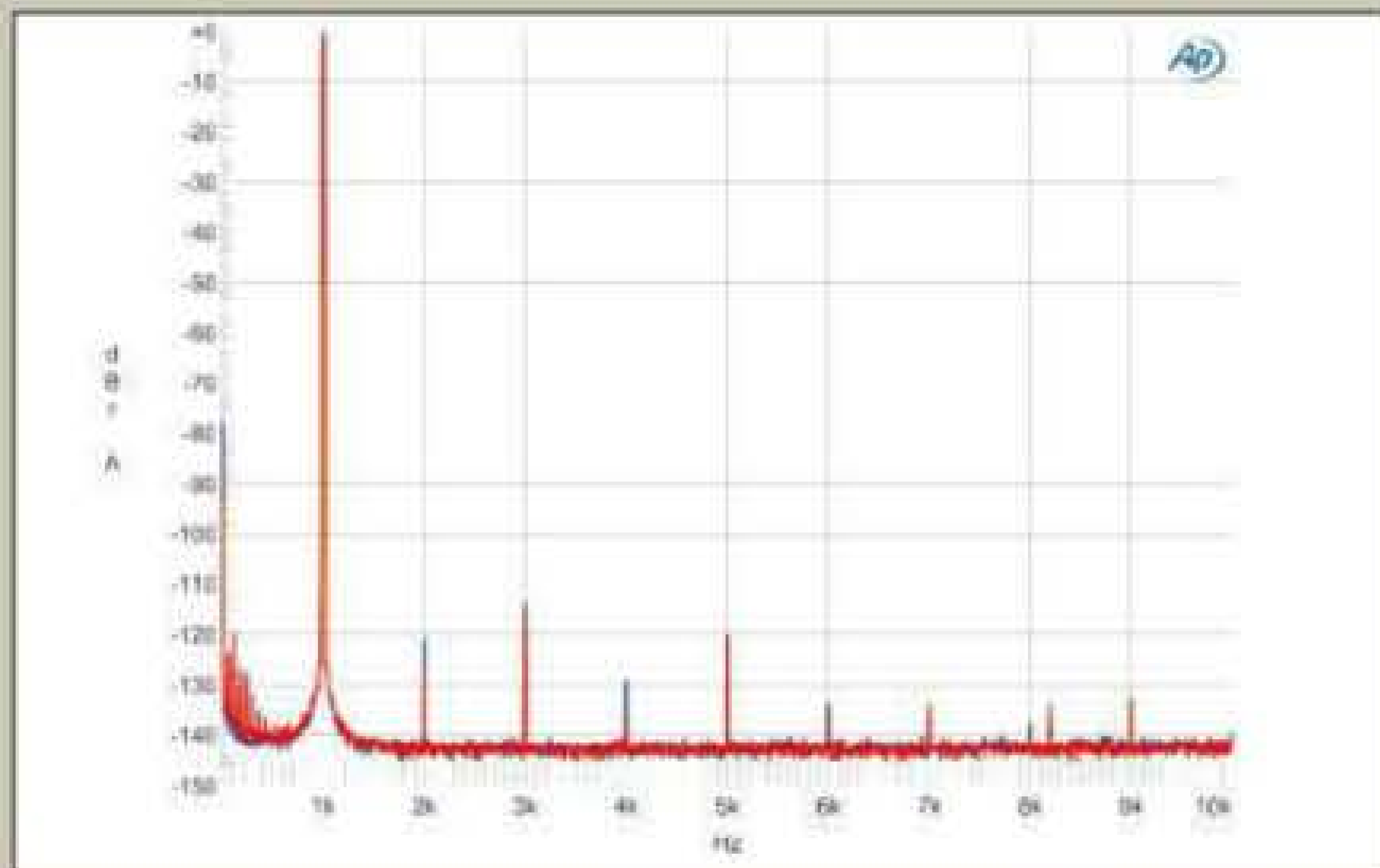


Fig.8 Soulution 710, spectrum of 1kHz sine wave, DC-10kHz, at 101W into 8 ohms (left channel blue, right red; linear frequency scale).



the 710 handled the entire audioband (never mind to DC, and to infinity and beyond) seemed constant, producing a heightened sense of coherent wholeness that felt like a stream of rapidly moving pulses, with no lag time or residue between events.

Put all of that together and I heard, from “Red Book” CDs, background blackness, three-dimensionality, image solidity, and diminishment of grain and smear that left me wondering whether some of my griping about “Red Book” CD was really about the inability of slower, less coherent electronics to keep up with the signal.

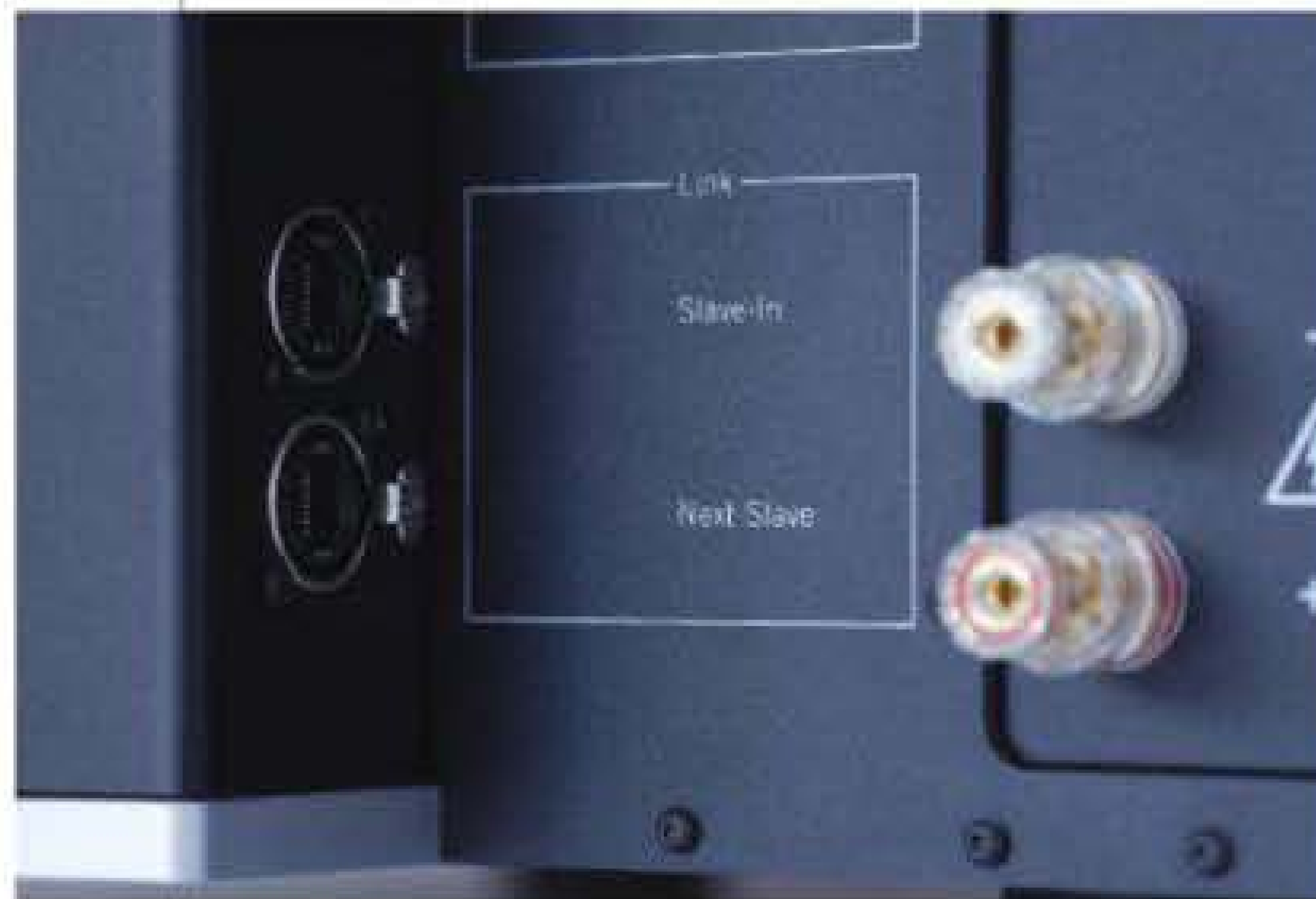
Until I started playing LPs. I’ve made it a mission to promote the soundtrack album for *Wretches and Jabberers* (CD, Rumor Mill BNC 78044), a documentary about autism. The film follows two adults with severe autism who, when very young, were misdiagnosed as being severely retarded. As adults they learned to type, and the world was opened to them. They now travel the world promoting the message that communication is the key to unlocking autism’s mysteries.

The songs, written or cowritten and produced by Josh Ralph, include collaborations with Carly Simon, Stephen Stills, Ben Harper, Bob Weir, Norah Jones, Judy Collins, Devendra Banhart, Martin Carthy, and others. They’re impeccably recorded at 24-bit/96kHz resolution, and produced with the audiophile values of space, dimensionality, and tonal purity.

But despite the star power, the beauty of the sound, the quality of the writing, and the value of the cause (a percentage of revenue goes to an autism foundation), no record label, minor or major, would release *Wretches & Jabberers*. So McIntosh Laboratories paid for impeccably produced sets of two 180gm LPs (mastered by Bob Ludwig and Bernie Grundman and pressed a RTI) and one CD. It’s available in a limited edition from the usual online suspects.

I had felt the CD to be a coarse, milky cousin of the refined-, pristine-, and three-dimensional-sounding LP—but when I played the CD through the Souldution 710, it reminded me of the LP’s transparency, three-dimensionality, blackness of backgrounds, and overall drop-your-shoulders relaxation.

The first LP I listened to through the Souldution was also *Wretches & Jabberers*, immediately after I’d sampled tracks from the CD. The LP still beat



AC and other connections are mounted on the sides of the rear-panel fan housing.

the CD, and by about the same amount, but only because it, too, was equally improved compared to my reference Musical Fidelity Titan power amp (which is plenty good, by the way, and *way* more powerful for less money). But in comparison, the Titan sounds warm and inviting, and less detailed and exciting. The 710 drew images that were finer, faster, purer, and more transparent than I’d become accustomed to hearing from this LP. Musical events exploded and then evaporated, leaving no residue.

Subsequent spins of the *Wretches & Jabberers* LP using the Classé CA-M600 monoblocks and the Music Reference RM-200 Mk.II tube amp proved the worth of the recording’s engineering and production, and of the quality of the electronics used to play it. While both the Musical Fidelity and the Music Reference had considerable strengths, neither could touch the 710’s speed, purity, transparency, three-dimensionality, and “black” backdrops. In terms of the portrayal of musical *events* minus tacked-on “electronica,” the 710 topped anything else I’d heard.

Henry Mancini’s main title music for the Paris caper *Charade*, starring Audrey Hepburn and Cary Grant, features a wood block in the left channel, a drum kit at the center, and bongos on the right. Over that rhythm track Mancini lays electric guitar (center), French horns and accordion (right), and trumpets (left), with plenty of space between them. It’s a great 1963 recording made at RCA Hollywood. The JVC XRCD edition sounds voluminous until you play the original LP (RCA Living Stereo LSP-2755, a Dynagroove pressing that mostly escapes that format’s evil consequences) or the Speakers Corner reissue. The Souldution 710’s rendering showed off all of its strengths: lightning-fast attacks, long and graceful decays, black backdrops, freedom from electronic artifacts, and rhythm’n’pacing up the wazoo (sorry to get technical

on you). If those are what you value in reproduced music, the 710 delivered them better than anything else I’ve heard.

When you’re sitting on a large stash of vinyl, it’s funny how a review component that does things better than you’re used to gets you to change course. I went from *Charade* to another RCA I’d not played in years but recommend highly: Gary Burton’s very first album as a leader, *New Vibe Man in*

*Town*, from 1961 (RCA LPS-2420). I can’t understand why it hasn’t been reissued on LP—a prejudice against vibes?—though it was reissued twice on CD by RCA, in 1995 and 2000. This trio session, with Gene Cherico on bass and Joe Morello on drums, was recorded at spacious Webster Hall and engineered by Ray Hall (no relation). It’s wonderfully relaxed and soothing music, the veterans giving the new guy excellent support. It’s also pure percussion, which played to the 710’s considerable strengths. The Souldution got the mallet strokes exquisitely right, as well as the round, bell-toned harmonics. Morello’s drum kit is instantly recognizable, and in his miking Hall seems to have been cognizant of the sound Morello got for Dave Brubeck’s *Time Out* sessions. The 710 reproduced the drummer’s brushwork with a proper regard for the proportions of the sounds of metal and skin, and rendered the ripely recorded kick drum with plenty of weight.

### Harmonics just right?

Here’s where it gets dicey. Depending on the rest of your system and your tastes in sound, you’ll either find the Souldution 710’s presentation of harmonics just right and in keeping with the rest of the amp’s magnificent performance, or, as one friend put it after a listen, you’ll hear less meat on the bones than you might like.

If you’re convinced that tubes are the way to drive speakers, the 710 is more likely to affirm than alter that opinion, though what it managed in terms of what it does better than any tube amp I’ve ever heard—without adding any of the solid-state clichés of edge, grain, glare, etch, brightness, etc.—will certainly give you pause.

When I want to judge a component’s portrayal of harmonics, I usually start with a recording by Jascha Heifetz of a violin concerto. Though not the best orchestral recording ever made, Heifetz’s disc of the Mendelssohn Violin



Concerto and Prokofiev's Violin Concerto 2, with Charles Munch and the Boston Symphony (LP, RCA Living Stereo LSC-2314), offers rich, superb string tone—and here's where the 710 won't be to everyone's liking.

I like the violin to sound somewhat richer and fuller than it sounded with the 710 driving my Wilsons, as delivered by the Musical Fidelity Titan, the Music Reference RM-200 Mk.II, and, to a somewhat lesser degree, by the Classé CA-M600. Through the Soulution 710, the attack was just right and the sheen very good, but the wooden body of Heifetz's instrument could have been better delineated. Paired with a Koetsu, Kiseki, or Goldfinger cartridge, the 710's combination might perhaps have been ideal. To get the ideal balance, I'd rather start with an astonishingly neutral component like the Soulution and fiddle with the lumpier transducer.

Heifetz's recording of the Tchaikovsky Violin Concerto, with Fritz Reiner and the Chicago Symphony (SACD/CD, RCA Living Stereo 67896-2), was sweet and smooth, but it came to life harmonically through the Music Reference in ways that all of the solid-state competition didn't quite get—but at the price of speed, detail, and focus.

Playing a 2004 recording of the Elgar Violin Concerto, with Hilary Hahn accompanied by Sir Colin Davis and the London Symphony (SACD/CD, Deutsche Grammophon 474 873-2), the 710's ability to naturally separate instruments in space without oversharp-ening the picture, and its expressive dynamic abilities, produced an enticing three-dimensional picture that more than made up for a sound that was less than full and rich.

I've neglected rock recordings here because it should go without saying that the 710 is an ideal amplifier for rock, and for amplified music in general. Despite its seemingly limited power output, it produced limitlessly wide macrodynamic swings while revealing the most minor microdynamic ones. Speed can do that.

The 710 was effortless in the areas of air, space, soundstaging, and other spatial parameters. It left nothing to be desired.

### Where's the bass?

The bass *was* there. The extension, punch, and unprecedented woofer control were there. The Soulution 710 produced very deep, very tight, well-controlled bass that revealed transient details that more

sluggish amps cover under a pleasing warmth, yet it would be fair to say that the 710 lacked the visceral *whomp* that many listeners prefer. At times I wished I felt that *whomp* a bit more, even as I heard more bottom-end detail from very familiar recordings.

I was struck by how much the Soulution's sound, and my reaction to it, resembled those of the Magico Q5 speaker, which I reviewed for the No-

the full audioband and beyond—and yet, also like the Q5, while it more than satisfied the brain, it sometimes left the body wanting something more visceral.

### Conclusions

Spend some time listening to live music and you'll be forced to conclude that there are no perfect audio products. In some ways, however, there are better and sometimes (but rarely) best audio

## THE SOULUTION 710 IS A TECHNICAL AND SONIC ACHIEVEMENT NOT TO BE DENIED.

vember 2010 *Stereophile*. Like the Q5, the 710 delivered incredible top-to-bottom control; resolved enormous amounts of detail, particularly of the low-level variety; sounded pure, with near-perfect attack and decay; was free of grainy or metallic artifacts; and definitely covered

products—and there are definitely audio products that raise the bar and break new ground. *These* are the rare types.

The Soulution 710 is one of the latter. Designer Christopher Schürmann has definitely met the goals set by Cyrill Hammer and Roland Manz and probably gone beyond them. The company principals realized the design by, apparently, sparing no expense in its manufacture. The Soulution 710 is impeccably built, and in terms of the sonic goals of ultrawide bandwidth, ultralow distortion, speed, and coherence, it succeeds completely. Now that I have spent some time listening to it, I don't find it difficult to understand why the amp has won a strong following, as well as the hearts and currency of well-heeled audiophiles around the world.

Nor do I find it difficult to understand why some find the sound unrelenting, less than fully fleshed out, and somewhat skeletal. It's important to mate the 710 with the appropriate front end and speakers.

The Soulution 710 is a technical and sonic achievement not to be denied. Is it, or is any 130/260Wpc amplifier, worth the cost of a very nice automobile? As the owner of a turntable that costs about 25% less than my first home did, who am I to talk? But as long as I have the soapbox, I have to say "Yes."

Nor is it hard to understand why not every audiophile or music lover will be on board for the long journey, despite what is, in many ways, the finest sound you're likely ever to hear from any piece of electronics—and what I'm sure will be impeccable measurements. However, I guarantee that if you jump on for a few stops, at an audio show, in a dealer's demo room, or in a friend's listening room, you'll have the time of your life. ■

### ASSOCIATED EQUIPMENT

**ANALOG SOURCES** Continuum Audio Labs Caliburn turntable, Cobra tonearm, Castellon stand; Graham Engineering Phantom II tonearm; Ortofon A90 cartridge.

**DIGITAL SOURCES** Playback Designs MPS-5 SACD/CD player—DAC, BPT-modified Alesis Masterlink hard-disk recorder, Meridian Sooloos music server, Pure Music software.

**PREAMPLIFICATION** Ypsilon VPS-100, Einstein Turntable's Choice phono preamplifiers; darTZeel NHB-18NS preamplifier.

**POWER AMPLIFIERS** Musical Fidelity Titan, Music Reference RM-200 Mk.II; Classé CA-M600 monoblocks.

**LOUDSPEAKERS** Wilson Audio Specialties MAXX 3.

**CABLES** Phono: Hovland/Graham MG2 Music Groove. Interconnect: TARA Labs Zero, Stealth Sakra, ZenSati. Speaker: TARA Labs Omega Gold, ZenSati. AC: TARA Labs The One Cobalt, Shunyata Research King Cobra Helix CX, Isoclean 1000.

**ACCESSORIES** Shunyata Research Triton power conditioner; Oyaide AC wall box & receptacles; ASC Tube Traps, RPG BAD & Abffusor panels; Finite Elemente Pagode, HRS SXR stands; Symposium Rollerblocks; Audiodharma Cable Cooker; Furutech DeMag & deStat LP treatments; VPI HW-17F, Loricraft PRC4 Deluxe record-cleaning machines. —Michael Fremer