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REINVENTING AMPLIFICATION

SOULUTION 711 STEREO AMPLIFIER, 701 MONOBLOCK AMPLIFIER, AND 725 FULL-FUNCTION PREAMPLIFIER

JONATHAN VALIN

SOULUTION 711 STEREO AMPLIFIER, 701 MONOBLOCK AMPLIFIER, AND 725 FULL-FUNCTION PREAMPLIFIER

SOULUTION, THE SWISS COMPANY WITH THE WHIMSICAL NAME, has been on a genuine tear lately. Its "more affordable" 5 Series electronics—the $55k 501 monoblock amplifier and $26k 520 full-function preamplifier, which I raved about in Issue 235—were in certain key ways (the bottom octaves, timbre, and large-scale dynamics) considerable improvements over its original, far-pricier 7 Series offerings (the $115k 700 monoblocks, the $40k 710 stereo amp, and the $40k 720 preamp, which I also raved about back in Issue 199). Now, with the release of its even more costly second-generation 7 Series components—the $155k 701 monoblocks that Robert will comment on, and the $65k 711 stereo amplifier and the $50k 725 full-function preamplifier that I will discuss—Soulution has put the horse back before the cart, producing what are, by a fair margin, the best solid-state electronics I've heard in my system. Indeed, the best electronics I've heard period, tube or solid-state.

I'm sorely tempted to leave it at that and save you the ordeal of reading paragraph after paragraph of backstory (and me the trial of writing them), but since claiming something is "the best" is close to meaningless without an explanation of what "the best" signifies, we'll take the scenic route.

As it's been a while since I reviewed the original 7 Series product, let me start by going over the ground that sets all Soulution gear apart from other solid-state, tube, and hybrid gear—the company's unorthodox use of negative feedback.

I first heard about Soulution (the name is a concatenation of "soul" and "solution") from solid-state amp maven and loudspeaker-designer Alon Wolf back in 2008. At the time I knew nothing about the brand, and when I looked it up on-line and discovered it was owned by another Swiss company called Spemot that specialized in building electrical motors and refrigeration units for the automotive industry, I was not enthralled. Shades of Crown, thought I. Then I chanced upon a rave review of a Soulution product—the 120Wpc dual-mono Soulution 710 stereo amp—in the tough-minded German hi-fi magazine *Stereo*, and got more interested. You see *Stereo* had pronounced the 710 a sonic and technological *wunderkind*. Indeed, the amp had tested so unprecedentedly low in distortion, so high in channel separation, so superbly well in S/N ratio that the magazine's chief technician hung the test results in a gold frame above his bench.

THE SONIC RESULTS WERE JUST AS ASTOUNDING. SUDDENLY YOU COULD HEAR EVERYTHING, AND HEAR IT WITH UNPRECEDENTED CLARITY, SPEED, AND NEUTRALITY.

Of course, some of us (at least some who go back that far) remember those Japanese solid-state amps from Sansui and others that also boasted record-low THD figures—but sounded like crap. The trouble was that to achieve such stellar specs the Japanese engineers had to ladle on so much global negative feedback that their amps were virtual TIM (transient intermodulation distortion) and SID (slew-induced distortion) generators. Feeding back the signal from the output in order to compare it to the signal at the input (and thus fix any errors that may have accrued as it made its way through the circuit) works fine if that feedback process is instantaneous, but feedback is a disaster if the amp takes too long to make its corrections. After all, the musical signal coming into the amplifier doesn't hold still for a portrait; it is constantly changing; and if too much time elapses (and we're talking nanoseconds here), the signal that the feedback circuit is comparing at the output is no longer the same signal that is being seen at the input. Think of it as a worst-case "jitter" scenario, albeit in the analog realm. Ever since the "specs wars" of the late Sixties, the received wisdom about solid-state has been that negative feedback is a bad thing—only to be applied sparingly and locally—while shorter signal paths and fewer parts are good ones.

With its 7 Series electronics Soulution turned this conventional thinking on its ear. In concert with the company's owner and CEO, Cyrill Hammer, Soulution's engineers decided that it wasn't feedback itself, but the speed at which the feedback loop operated that was the problem.

As I've already noted, to eliminate the time-related distortion, graininess, and edginess that feedback engenders, you have to make those feedback loops correct errors instantaneously. This means that circuits and power supplies must operate at incredibly high speeds (which translates into incredibly high bandwidths) and with very high precision. Forgetting about shorter signal paths and fewer parts (the 710 amplifier used over 3000 components!), Soulution found ways to do this very thing, reducing propagation delay times (the amount of elapsed time it takes to correct a signal via feedback) to 5–10 *nano*seconds (billionths of a second), where big solid-state amps typically had propagation delay times of 1–5 *micro*seconds (millionths of a second). This thousand-fold increase in speed allowed for a huge increase in local negative feedback (and a drastic lowering of THD levels), without the usual price paid in time-domain errors.

The measured results of Soulution's ingenious, high-speed, high-local-feedback circuit were phenomenal. In the 710 stereo amp, for example, THD was well below 0.0006%, signal-to-noise ratio well above 108dB, channel separation an astounding 86dB, damping factor greater than 10,0000, slew rate 330V/ns, while power bandwidth went from DC to 1MHz. (The monoblock amps measured substantially better!)

The sonic results were just as astounding. Suddenly you could hear…*everything*, and hear it with unprecedented clarity, speed, and neutrality.

I will never forget my first listen to the Soulution 710 stereo amplifier. It just so


soulution 725
Master 1
Link
Master 2
RS-232
DC-out
Left
Gnd-Lift
Main-out
Gnd-Lift
Right
Left
In 6
In 5
In 4
In 3
Phono
Asym
In 6
In 5
In 4
In 3
Phono
Right
Left
In 2
In 1
Sym
In 2
In 1
Right
MAINS
soulution 701
RS-232
IN
LINK
OUT
Mono
Dual
MODE
OUTPUT
INPUT
Gnd
Lift
GLF
INPUT
Speaker
Dual
Mono
Speaker
Dual
SETTINGS
Brightness 1/2/3
Start-Input
1.Sym
2.Asym
Start-Mode
1.On / 2.Off / 3.Link
123
1 2
123

happened that, at the time, I was using what remains the most finely detailed transducer I've reviewed, the then-brand-new MartinLogan CLX electrostats. In concert, that amp and those speakers set a standard of transparency and resolution that had never before been approached and has never since been equaled in my system. The sheer number of previously inaudible details about the performance, the music, the venue, and the engineering they brought to light on record after record—and these were records I thought I knew by heart—was simply mind-boggling.

Hearing exactly how, oh, Joni Mitchell's vocal harmonies on *Blue* had been separately recorded in a sound booth and then potted into the mix to create a plethora of Joni's in the background (backing up Joni in the foreground) simply thrilled a "fidelity-to-sources" listener like me, for whom the experience was like peering over the shoulder of the mastering engineer and observing how he'd mixed the various tracks down to two-channel work parts. However, I could also see where so much "non-musical" detail might be off-putting to a listener for whom the color and drama of music comes first. After all, not everyone wants to watch the man behind the curtain twiddling dials and adjusting sliders each time he sits down to enjoy his favorite tunes.

Indeed for some listeners (not me, mind you) the 710's presentation *was* overly "analytical"—dreaded word—in that it revealed artifices (like tape splices, mike preamp clipping, and overdubs, as well as every mechanical noise that a musical instrument is capable of making when it is played close by the diaphragm of a microphone) that other, less transparent amps and preamps glossed over, and that the musicians and recording and mastering engineers probably didn't want or intend you to hear so plainly. While I reveled in this wealth of detail for all the previously unheard subtleties it revealed and for the greater sense of realism it brought to well-recorded sources, some members of my little listening panel weren't so sanguine. A few of them felt the 710—particularly in combination with the CLXes—was just a bit *too* revealing.

THE 710 WAS NOT AN AMP ONE WOULD EVER CALL WARM AND INVITING-OR COLD AND OFF-PUTTING, FOR THAT MATTER.

Moreover, it could be argued (and was in other mags) that the 710's super-high resolution was being purchased at a cost in lifelike density of tone color. Even a fan like me would have to admit that listening through it did require a bit of a sonic adjustment. The 710 was not an amp one would ever call warm and inviting—or cold and off-putting, for that matter. It just didn't have a color of its own; like glass or water it had the color of what you saw through it or reflected by it, be that the source or the speakers. Some critics (and some on my listening panel) chose to view this colorlessness as the *absence* of tone color, and by tube or tube-hybrid amplifier standards the amp was a bit lean in the all-important midbass and power range (100Hz–400Hz), where so much of music's drive, body, and natural warmth originate.

My bottom-line conclusion about the 710 was that if you were an "absolute sound" or "fidelity-to-source" listeners like me, it was a no-brainer must-listen. However, if you preferred an inherently warmer, richer, more *gemütlich* sound, then the 710 probably wouldn't be your cup of resistors and capacitors.

This is where things stood with Soulution gear until the introduction, in 2012, of the company's new 5 Series electronics, wherein everything changed—dramatically.

Although I'd previously heard prototype 501 monoblock amplifiers and the 520 preamplifier at several shows around the country and the world, I was not fully prepared for the enormous change in sonic character that these fabulous new electronics brought to the table.

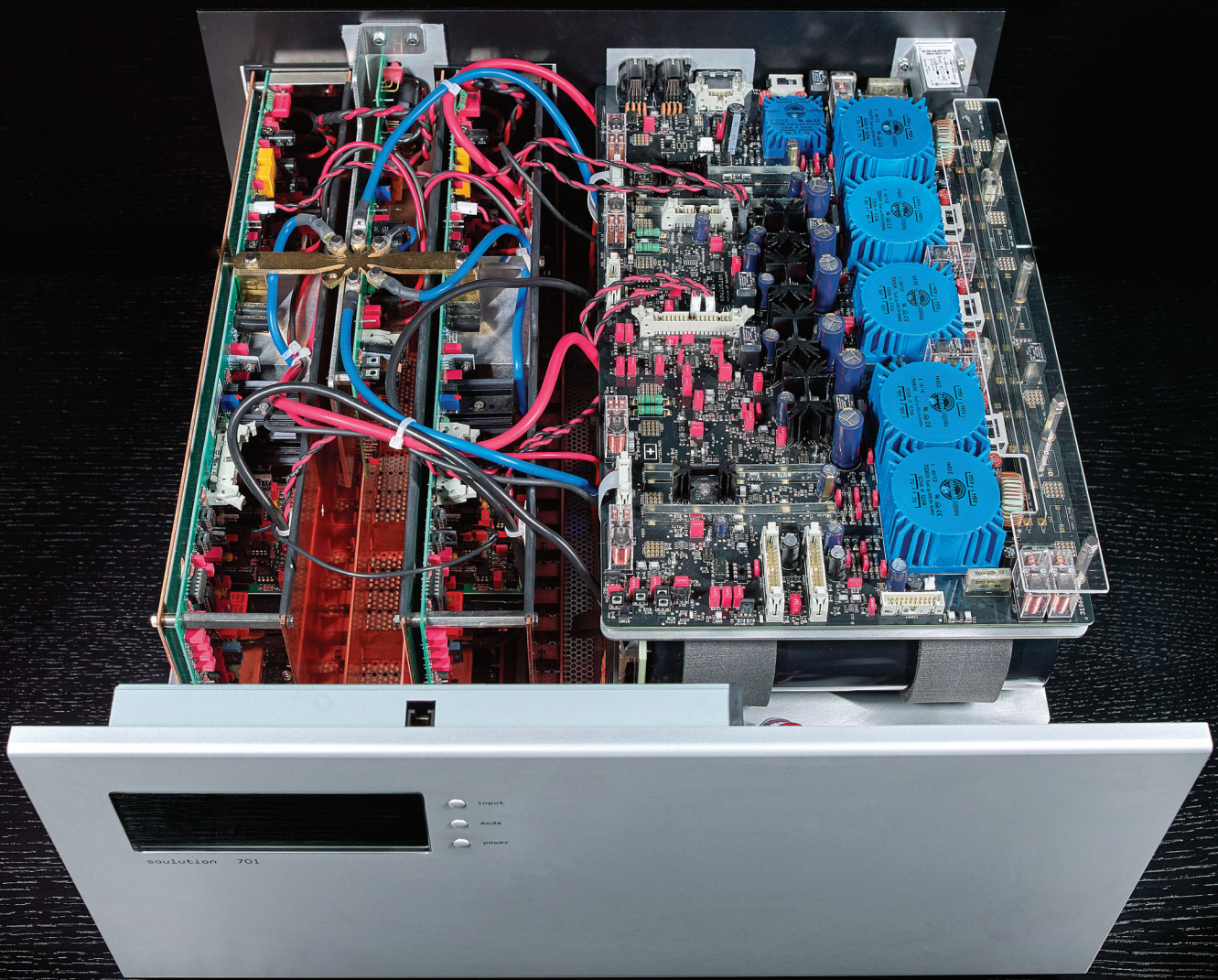
Everything that "as you like it" (or "musicality first") listeners complained about in the original 7 Series electronics—the overly detailed presentation (that, for some, bordered on the analytical), the leaning out of tone color in the midbass and power range (that, for some, robbed the amp of natural warmth and weight), the "too-neutral-and-transparent" overall sound (that, for some, bordered on sterility)—was gone! In its place were a natural warmth and near-voluptuous beauty of timbre that I've seldom before heard in solid-state amplifiers, and a bass and lower midrange power, color, weight, and impact that I'd *never* heard before from any electronics of any kind.

What the hell happened?

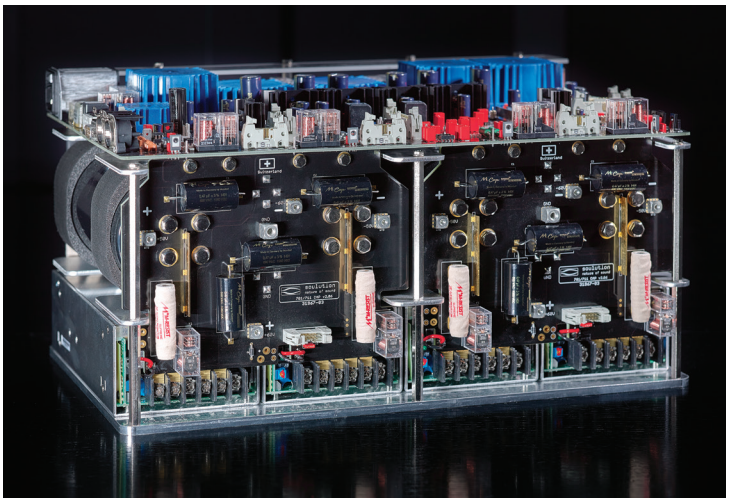
If you read the sidebar interview with Soulution's CEO, Cyrill Hammer, you will get a detailed answer to that question. But the short-form response is that the new power supplies in the 5 Series amplifiers and preamplifiers (and the consequent changes those PSUs allowed in circuit topology) made all the difference.

Unlike the original 7 Series amplifiers, the 5 Series used "switched-mode" power supplies (SMPS)—two of them, electrically isolated from each other (and from the audio circuit) by opto-couplers and transformers, "high-performance-filtered" for noise at the inputs and outputs, and high-speed voltage-regulated. Each of these switched-mode supplies was capable of delivering 600VA, and Soulution claimed that, together, they "delivered considerably more stable power than any conventional, transformer-based technology." (Lest you be confused, the Soulution 501 was *not* a Class D amp. Though it used a switched-mode power supply, its gain stages ran in Class AB, heavily biased toward Class A. In addition to the switched-mode supplies, the 501 also used four linear power supplies for other functions.)

The upside of SMPSes as I understood it (make that "as Robert Harley explained it to me") is that they keep the power supply's filter capacitors constantly and fully charged no matter what the signal-demands; they can also be power-factor-corrected (so that current and voltage are not slightly out of phase, as they are in conventional supplies).


input
mode
power
soulution 701

SOULUTION 711 STEREO AMPLIFIER, 701 MONOBLOCK AMPLIFIER, AND 725 FULL-FUNCTION PREAMPLIFIER



As I said in my review of the 5 Series electronics, I was also aware there were switched-mode naysayers, who pointed out that, even if filtered and shielded, the strong noise (chiefly RF) of the digital switching signal could be radiated throughout the circuit. All I can tell you is that I didn't and don't hear this issue. (For measured confirmation, see the charts in my interview with Cyrill Hammer.) What I did and do hear is that when an amp has no droop in the supply at any level with any signal, the net effect seems to be equivalent to plugging your speakers directly into a wall socket.

When it comes to dynamic linearity the 501 was simply nonpareil. Every other amp I'd listened to, tube or solid-state, reached a point where it simply couldn't get louder or more dynamic without also audibly changing its sonic character. Sometimes, this pivot point came relatively early on, as it did with the puny ARC Reference 210 monoblocks (less so with the stouter Reference 250s); sometimes it came relatively late, as it did with the Constellation Centaur. But came it did. And when it came, the music didn't just get louder (if it *did* get louder); it also got more distorted. Typically, timbres began to lose their natural sweetness, becoming thinner, more skeletal; with the loss of tone color textural details seemed to be planed away, too, so that the resolution of instrumental body and performer articulations was greatly reduced; transients and big dynamic swings often acquired a sharp, unpleasant edge or, alternately, sounded flattened out, as if they were being compressed against an invisible loudness ceiling; the soundstage, in turn, congealed, as if it, too, were being pressed against a pane of glass. Understand that all of these effects set in well before actual clipping. Understand, as well, that the absence of this sense of strain or compression is one of the foremost differences (if not *the* foremost difference) between music performed live and music played back on a stereo.

Up until it could give no more and its protection circuits simply shut it down to silence, the 501 was the only amp I'd heard that didn't do *any* of this. It just kept getting louder *without any change in sonic character*—so far beyond what you might expect from its nominal 125 watts that its actual output was difficult to gauge. And because it kept getting louder without strain or outright distortion magical things happened in the bass and power range on big dynamic moments. Tymps, bass drums, gongs, doublebasses, trombones, sarrusophones, tubas, trumpets, bassoons and contrabassoons, bass clarinets, saxophones, pianos, organs acquired the acoustical power that they have in life on big orchestral tuttis—that sense of effortless, seemingly limitless power focused by the hall and projected toward you with enough physical force to be felt like an onrushing wave. With the 501s, bass-range instruments *gained* sweetness, texture, solidity, and energy as they got louder, as if the amp were continuously kicking itself into higher gears—as if there were no end to the gears it could engage. (The question of how an amplifier performs when it is stressed by musical dynamics, particularly in the bass, and by volume levels is the main reason why I feel that the old saw about the seminal importance of "the first watt" is, at best, misleading. In many—if not most—real-world systems, it is the hundredth watt that counts, and as I just got done saying the hundredth watt rarely sounds anything like the first one.)

When you combined this incredibly lifelike delivery of power, top to bottom, with the 5 Series' newfound warmth and density of tone color, you got a solid-state amp and preamp the likes of which I'd never before heard. No, I don't suppose the 501/520 sounded *quite* as incredibly detailed as Soulution's 700/720 (or Constellation's Performance Series products), but, as I said in my review of the Odyssey Stratos monoblocks in our last issue, it is hard to know whether this was an inherent shortcoming (and if it were a shortcoming, it sure wasn't much of one), or whether the addition of so much more power, color, and weight in the bass and midrange was simply making the upper midrange and treble (where a goodly number of transients live) sound less "exposed." In any event, a lack of detail was the last thing you'd complain about in a 5 Series product.

True, the tonal balance of the 5 Series amps was now inherently dark, warm, and beauteous—what Michael Børresen of Raidho calls a "bottom-up" sound, far removed from the brook-clear neutrality and colorlessness of the 7 Series offerings. But having spent most of my life listening to warmish tube amplifiers, that didn't faze me. In fact, after living with the 501 monoblocks and the 520 preamplifier (driving Raidho D-5s and D-1s) for the better part of a year, I would've been hard put to imagine electronics that were better, which is to say, more beautiful, more exciting, and more lifelike on everything from violin sonatas to Lou Reed in his glam period. I truly loved the Soulution 5 Series electronics and wouldn't have traded them for anything else. Indeed, I would still feel that way were it not for the damnable arrival of Soulution's second-generation 7 Series amp and preamp under review.

As I said at the start of this tome, saying something is "the best" is meaningless if you don't define the term. So…let me define it now. No, it does not come down to detail or dynamics or imaging or soundstaging or timbre or texture, although all these things play key parts. And, no, it does not come down to the absolute sound, either, although, on well-

SOULUTION 711 STEREO AMPLIFIER, 701 MONOBLOCK AMPLIFIER, AND 725 FULL-FUNCTION PREAMPLIFIER

recorded acoustic music the fool-you semblance of real instruments playing in a real space is essential. At this point in my long, grey career in audio reviewing, I think a thing can only be called "*the* best" a reviewer has heard if, and only if, he honestly believes that it is likely to fully satisfy *every kind of listener on every kind of music in just about any kind of system*.

Let's face it (as I've tried to do in review after review), most gear appeals primarily to a certain kind of listener—be he a "fidelity-to-source" or "absolute sound" or "musicality first" one. This doesn't make such equipment unworthy—far from it—it simply means (if one is honest and objective, rather than biased and absurdly dogmatic about our hobby) that what is perfect for a given listener with a specific taste in sound and music and a certain kind of hi-fi system isn't necessarily going to be as perfect (or close to as perfect) for another listener with a different taste in sound and music and a different system. This, friends, is the way the world works, ignoring such variables and telling readers what they *should* prefer (because the reviewer himself prefers such things) is, IMO, propaganda.

Don't get me wrong: A reviewer *must* have his own preferences, but he should not let them stand in the way of objectively describing and/or recommending equipment that, while it may not fully meet his own needs, *will* clearly meet those of someone with a different approach to sound and a different taste in music. I'm not advocating the abandonment of standards (personal or professional), and I'm certainly not saying that there aren't appreciable differences among audio components, nor am I advocating the kind of test-based absolutism or blind (in more than one sense of the word) listening that results in absurd positions such as: "All amplifiers sound the same," or "Outside of the way they load sources, cable and interconnects make no sonic difference," or "The LP is a low-resolution medium." I'm simply saying that reviewers could do worse than to become a bit more catholic in their approach to what they're reviewing. I'm also saying that for me, calling something the "best" of its kind means that I can't imagine a listener who wouldn't consider the component in question ideally suited to his sonic preferences and musical taste and hi-fi system, no matter what those things happen to be.

I'VE NEVER HEARD FENDER BASS LINES, KICKDRUMS, AND TOMS REPRODUCED BY AN AMPLIFIER WITH AS MUCH LIFELIKE SPEED, COLOR, POWER, AUTHORITY, AND EFFORTLESS EASE.

Which brings us at long last (I warned you—remember?) to the Soulution 711 stereo amplifier and 725 preamplifier under review. Because the 711 and 725 sound so much alike, I'm going to concentrate on the amplifier—and comment on the preamplifier in a sidebar. You can safely assume, however, that when used together the 711 and the 725 (once broken in) have precisely the same sonic character.

Happily, it is easy to describe both of these products. On the outside, they are identical to their forebears; both are housed in the same gun-metal grey, Bauhaus-style chassis that Soulution used for the 710 amp and 720 preamp, with little rectangular windows inset in their faceplates for their LED readout screens that allow you, via the remote or control knobs on the units themselves, to select various options. Inside, they use the exact same high-speed, high-negative-feedback circuits found in their 7 Series predecessors. As far as the amplification stages are concerned, the 711 is identical to the 710, and the 725 to the 720.

As was the case with the 5 Series components, the big difference in both the amp and the preamp is their power supplies. Like the 501 monoblocks, the 711 dual-mono stereo amplifier uses two, fully regulated switched-mode power supplies (as well as several linear supplies for certain sub-systems), and it uses these SMPSes for the same reasons they were employed in the 501—to keep "the voltage to the amplifier channels perfectly constant irrespective of the music signals."

As Cyrill Hammer says in the sidebar interview, the use of these SMPSes had certain beneficial side benefits beyond providing cleaner, nearly inexhaustible power. For instance, because an SMPS runs cooler (while permitting it to create higher voltage), Soulution was able to omit noisy cooling fans in the 711. In addition, since SMPSes allow for much more efficient power-factor correction (PFC), the supplies no longer polluted the mains with harmonics and current spikes, as linear supplies do, improving the performance of the amp itself and of ancillary electronics that are also plugged into the wall. Furthermore, the smaller size of the SMPSes allowed a more efficient arrangement of parts and boards inside the amp, reducing the lengths of cable that had to be used between and among them, thus making for shorter signal paths. Finally, when these much more stable and efficient, lower-noise, higher-output SMPSes were paired with 1,000,000 microfarads of custom-made ultra-low-ESR capacitors (as they are in the 711), current peaks, particularly in the bass, could be reproduced with greater ease and fidelity, and current delivery could be raised from 60A to 120A (although pulling that much current out of the wall may prove to be a problem in most homes).

What this translates to sonically is almost exactly the same thing that it translated to in the 501 monoblocks—an amplifier with simply unparalleled bass-range power, color, and impact (even better here than the 501, an amp that I thought couldn't be bettered in the bottom octaves), a power range and midrange of exceptional warmth and tonal beauty (ditto), and a treble that is as liquid, edgeless, and delicately detailed as any I've heard from solid-state. The 711 stereo amplifier is every bit as gorgeous,

thrilling dynamic, startlingly lifelike (given the right sources), and seemingly inexhaustible as the superb 501 mono. Indeed, it might be just a shade more inexhaustible (if that isn't a solecism), in that it doesn't ultimately give up the ghost and shut down, no matter how loudly you play it. In addition to its inexhaustibility, the 711 has much of the same marvelous (and extremely lifelike) sonic stability of the 5 Series monoblocks—sounding virtually (though perhaps not quite as completely) the same at very low levels as it does at ear-splittingly high ones.

So far I'm describing an amp that has the same virtues as a less expensive one. But the truth is that the 711 has a leg up on the 501 in every area in which the less-pricey amp excels; plus it does certain things more than a leg better that the 501. First, there is the sheer amount of information about performers and performance that the 711 delivers. While the 501 is an extremely detailed amplifier, it's no Soulution 710 when it comes to low- and high-level resolution. The 711 very nearly is. To hear the effortless way this amp sorts out strings, winds, brass, and percussion (and individual players within each section) even on the most floor-shaking *fortississimos* of a terrifically busy and dynamic piece like the *Feria* of Ravel's *Rapsodie espagnol* is to hear a huge symphony orchestra reproduced with so much of the limitless ease and air, dense and variegated tone color, and thrilling acoustical power of a real orchestra in a real hall that it will send chills down your spine and goosebumps up your arms. (The Soulution 711 is, if nothing else, a non-stop goosebump-raising machine, regardless of music.)

But the 711 doesn't just turn this high-resolution trick with big music—be it classical, rock, or jazz. It also has the 710's ineffable touch when it comes to very low-level textures—the way strings, for instance, are being plucked or brushed or picked, or singers are shepherding their breath or modulating their vibrato. Soulution's new stereo amp will leave you in no doubt about how a performer is playing his instrument and the mechanism by which the instrument is producing sound. When, for instance, I told you in a previous review about being able to hear how pianist Gilbert Kalish was alternately using his fingernails and the pads of his fingertips to rub the thick coiled strings of his concert grand in the open-piano glissandos of George Crumb's *Four Nocturnes*, I was also telling you about the incredibly fine resolution of colors, textures, and articulations that Soulution's new amplifier and preamplifier are capable of. Of course, the 710 and 720 preamp were capable of this selfsame thing, the difference being that the 711/725 does it while also fully preserving the natural warmth and density of tone color of the instrument Kalish is playing. (The second thing the Soulution 711 is, if nothing else, is meltingly beautiful in timbre.)

Then there are its bass dynamics. As I've already noted, I thought the Soulution 501 was unbeatable in the low end. But in all my life I've never heard Fender bass lines, kickdrums, and toms reproduced by an amplifier with as much lifelike speed, color, power, authority, and effortless ease as they are through the 711. Listeners have literally come out of their chairs when they've heard the tremendous impact of Chris Frantz's sledgehammer drumming at the end of "Life During Wartime" or Tina Weymouth's fat, throbbing, incredibly powerful bass line intro to "Take Me To The River" from The Talking Head's *Stop Making Sense*. And, as I've already noted, the 711 is just as incredibly lifelike on big moments with full orchestra, such as the massive crescendos of *Rapsodie espagnol*. Trust me here: Outside of an actual rock, big jazz band, or symphonic concert, you've never heard anything like this amp in the bottom octaves. Which leads me to the third thing that the Soulution 711 is; if nothing else, it is a benchmark in the bass and power range, capable of unrivaled slam, inexhaustible dynamic range, and ravishing tonal color.

So what doesn't it do? Well, the 711 isn't as colorlessly neutral as the 710. Like the 501, it has a big, dark, tremendously authoritative, bottom-up sound. Though not as beguilingly soft in the treble as the 501, it is still probably a bit softer than life in the top octaves (at least when it is driven by the phonostage in Soulution's companion 725 preamp). While very high in resolution and superb on transients, it is not quite the sonic vacuum cleaner that the original 710 was or that the Technical Brain TBP-Zero/EX is. Though it has an astonishing measure of the three-dimensional bloom that I associate with tube amps (Soulution amps are almost unique among solid-state components in this regard), it doesn't have quite the same lifelike midband presence of, say, the ARC Reference gear; nor does it have the pitch-perfect steady-state tone that ARC has in the midrange (although ARC simply doesn't compete with the 711 on transients or at the frequency extremes). When it comes to soundstaging and imaging the 711 is also a bit reminiscent of ARC tube amps, in that the stage is wall-to-wall vast, while instrumental images within that stage are less razor-cut and more life-sized than they are through most other solid-state amplifiers. (Once again, this larger, more natural, more tube-like imaging is characteristic of Soulution.) Finally, because of its tremendous energy—it may sound like I'm exaggerating this quality, but I'm not—and dense, lifelike color from the bottom bass right through the power range, the 711 may drive your speakers and your room a little nuts on certain midbass notes in big tuttis (as I said in my review of the *considerably* more lightly balanced Odyssey Strati). But once you hear all that horripilating speed and slam and color, you're not going to care.

As great as the Soulution 711 is, there are other amps out there that may equal or outdo it in this area or that. (The Constellation amps, for instance, are *at least* as quick and detailed, albeit leaner and less authoritative in the bass range and more top-down sounding; the fabulous Siltech SAGA system is also nearly as high in speed and resolution and at least as beautiful in tone color, although also

somewhat top-down in balance and less visceral in impact, at least in comparison to the ultra-authoritative bass octaves of the Soulution; when it comes to vocal realism the ARC amps I mentioned a paragraph ago still rather own the midrange; and the Technical Brain TPB-Zero/EX remains the once and future king of transient speed, ultra-fine detail, and colorless neutrality—the perfect amp for "transparency-to-source" listeners.) Still, IMO, none of these very worthy competitors has quite the same universal appeal—the potential to please every kind of listener on every kind of music in virtually every kind of system (save perhaps for horns)—that I feel the Soulution 7 Series gear has. This is an amp (and preamp) with enough resolution to consistently delight a fidelity to sources listener like me, enough fool-ya realism (on realistic recordings) to make absolute sound listeners swoon, and more than enough beauty and dynamism to knock it out of the park for those of you for whom the power and passion of music come first. Trust me again, folks: Once you hear the 711 you'll want to own it. If you can't afford it (and how many of us can?) there is always the next-best 501/520 combo for less (albeit still a lot of) money, the high-res Constellation Performance Series at about the same price, the uniquely beguiling Siltech SAGA hybrid, the ultra-transparent Technical Brain, or, for a lot less dough, the phenomenal Odyssey Stratos monoblocks.

It goes without saying that the Soulution 711 gets my highest, warmest, and most enthusiastic recommendation, as does its companion preamplifier the 725 (for which see the sidebar). Once again, it is the most consistently beautiful, thrillingly dynamic, and persuasively lifelike amplifier I've heard in my system thus far, no matter the music or the source. It is also, in case you haven't yet noticed, the winner of *The Absolute Sound*'s highest honor, our 2014 Overall Product of the Year Award (which it shares with its monoblock cousins and its companion-piece, the superb Soulution 725 preamplifier).

SPECS & PRICING

Soulution 711
Type: Stereo solid-state power amplifier
Power rating: 2 x 150W @ 8 ohms; 2 x 300W @ 4 ohms; 2 x 600W @ 2 ohms
Output voltage max: 31V RMS
Output current max: 120A
Impulse power rating: >6000W
Sensitivity: 1.55V RMS
Gain: 26dB
Frequency response: DC–1MHz
Slew rate: 400V/ns
THD+N @ 1kHz: <0.001%
Signal to noise ratio: >108dB
Damping factor: >10,000
Input impedance: XLR, 4.7k ohms; RCA, 10k ohms
Output impedance: 0.001 ohms
Dimensions: 277mm x 480mm x 277mm
Weight: 143 lbs.
Price: $65,000

Soulution 725
Type: Full-function solid-state preamplifier
Amplification: Balanced, +9.5–18.5dB; unbalanced, +3.5–12.5dB; phono, +54–60dB
Frequency response: DC–1MHz
Slew rate: 400V/ns
Distortion (THD): <0.0006%
Signal-to-noise ratio: 130dB
Crosstalk: 105dB
Input impedance: Balanced, 2k ohms; unbalanced, 47k ohms; phono, adjustable
Output impedance: Balanced 2 ohms; unbalanced, 2 ohms; record, 100 ohms
Inputs: Two balanced (XLR); three unbalanced (RCA); one phono (RCA)
Outputs: One balanced (XLR); one unbalanced (RCA); two LINK-System (RJ45); one DC-Out (sub-D high current)
Dimensions: 480mm x 167mm x 450mm
Weight: 66 lbs.
Price: $50,000

JV's Reference System
Loudspeakers: Raidho D-5, Raidho D-1, Avantgarde Zero 1, MartinLogan CLX, Magnepan 1.7, Magnepan 3.7, Magnepan 20.7
Linestage preamps: Soulution 725, Constellation Virgo, Audio Research Reference 10, Siltech SAGA System C1, Zanden 3100
Phonostage preamps: Audio Research Corporation Reference Phono 10, Constellation Audio Perseus, Innovative Cohesion Engineering Raptor, Soulution 725, Zanden 120
Power amplifiers: Soulution 711, Siltech SAGA System V1/P1, Constellation Centaur, Audio Research Reference 250, Lamm ML2.2, Zanden 8120, Odyssey Audio Stratos
Analog source: Walker Audio Proscenium Black Diamond Mk V, TW Acustic Black Knight, AMG Viella 12
Tape deck: United Home Audio UHA-Q Phase 11 OPS
Phono cartridges: Clearaudio Goldfinger Statement, Ortofon MC Anna, Ortofon MC A90, Benz LP S-MR
Digital source: Berkeley Alpha DAC 2
Cable and interconnect: Crystal Cable Absolute Dream, Synergistic Research Galileo LE, Ansuz Acoustics Diamond
Power cords: Crystal Cable Absolute Dream, Synergistic Research Galileo LE, Ansuz Acoustics Diamond
Power conditioner: Synergistic Research Galileo LE, Technical Brain
Accessories: Synergistic ART and HFT/FEQ system, Shakti Hallographs (6), Zanden room treatment, A/V Room Services Metu panels and traps, ASC Tube Traps, Critical Mass MAXXUM equipment and amp stands, Symposium Isis and Ultra equipment platforms, Symposium Rollerblocks and Fat Padz, Walker Prologue Reference equipment and amp stands, Walker Valid Points and Resonance Control discs, Clearaudio Double Matrix SE record cleaner, Synergistic Research RED Quantum fuses, HiFi-Tuning silver/gold fuses

SOULUTION 711 STEREO AMPLIFIER,
701 MONOBLOCK AMPLIFIER, AND
725 FULL-FUNCTION PREAMPLIFIER

THE SOULUTION 725 FULL-FUNCTION PREAMPLIFIER

Once it has broken in (for which see below), the 725 full-function preamp is virtually indistinguishable sonically from its stablemate, the 711 stereo amplifier. Like the amp it is an immensely powerful, richly colored, very-high-resolution component. As is the case with the 711, the 725 uses the same circuit as its predecessor, the 720, but once again like the 711 it benefits from a redesigned, highly regulated linear power supply (not switched-mode, in this case) with 580,000 microfarads of custom-made capacitance (more than you'll find in most high-end amplifiers).

You can read about some of the other tweaks that Soulution has applied—e.g., the use of high-precision, ultra-fast, audio-grade operational amplifiers in the three regulation stages of the power supply—in my interview with Cyrill Hammer. On-line at Soulution's website, you can also read about the 725's remarkable volume control, which is actually a dual unit that combines high-precision, low-noise metal-foil resistors with a second volume control with a PGA (programmable gain amplifier) that only switches in when the volume is changed—to prevent the amplification of switching noise. Once the new volume level is selected, control is returned to the precision resistors.

I think I should note that, unlike the 711 amplifier, which sounded more or less phenomenal right out of the box, the 725 was so unimpressive on first listen that I thought something had to be wrong with it. Lean in the midbass, borderline bright and edgy in the treble, it wasn't at all Soulution-like. (I believe Robert had much the same experience, so it wasn't just my particular unit.) After a panicky call or two to Cyrill Hammer in Switzerland and Soulution's importer, Art Manzano, in L.A., I got enough reassurance to keep breaking the 725 in. And, just as promised, within a few days the preamplifier began to change its tune, growing peacock feathers when it came to timbre and bull-sized *cojones* when it came to dynamics. After a week or two of settling time it sounded as I've described in this review.

I guess the moral here is that if you hear this thing at a show or in a shop—or if you actually buy one—make sure it's been played-in for several weeks before you start listening critically. If the 725 hasn't been suitably broken in, you're not really hearing it.

The 725 is notably faster, higher in resolution, and more powerful than the less expensive Soulution 520 that I so adored. Where they are alike is in tone color—both are exceedingly rich, dark, and beautiful sounding—and in kick-ass bass response. In addition, both include an absolutely first-rate phonostage, with adjustable gain, loading, and subsonic filtration.

All of the many, many other adjustable parameters built into the preamp—from channel balance to bandwidth selection for each input—are easily accessed at the press of a button on the remote or on the faceplate of the preamp. The procedure you have to follow to change settings is explained in the user manual, which, with one exception, is unusually clear and well written. While the process may, at first, be a little bewildering, once you grasp the sequence it becomes second nature.

The exception that I mentioned has to do with changing the loading of moving-coil cartridges, which is done via two banks of tiny dip-switches (one for each channel) on the back of the 725, concealed behind (or protected by) two large removable plugs. The manual is a bit confusing about doing this, although I'm told it will be improved. Although the number of loading choices you can make is unusually large, I'm not a fan of dip-switches (particularly tiny ones that can only be set with a jeweler's screwdriver or a sturdy toothpick). If there is one thing I would change about the phonostage it would be this method of selecting mc loading.

What I wouldn't change, however, is the sound of the phono preamp, which is simply superb—perfectly consonant with the amp and the linestage preamp in speed, color, resolution, staging, imaging, and power. In fact, until I got the $27k, two-box, Product of the Year Award-winning Constellation Perseus phonostage, I would have said that the phono preamp built into the 725 was the best solid-state unit I'd heard. Now it's kind of a tie, which should tell you how extremely good the Soulution's reproduction of vinyl is.

JV INTERVIEWS SOULUTION'S CYRILL HAMMER

What are the fundamental differences between the 711 and the 710, and the 700 and the 701 amplifiers?

The big difference between the 710/711 and 700/701 is the main power supply unit that provides the power for the audio amplifiers. The fundamental change is that we are using a new switched-mode power supply (SMPS) that is fully regulated. As a result, the supply voltage provided to the amplifier channels remains perfectly constant irrespective of the music signal to be amplified. This was not the case for the 700/710 amplifiers. Despite our use of powerful toroidal transformers, voltage could drop considerably during massive bass impulses, and variations of AC voltage (from wall outlets) could make this situation even worse. In order to ensure safe operation under all circumstances we had to apply significant safety margins on the 710/700's supply voltage to the amplification stage, which led to higher heat dissipation and lower power ratings. With the SMPS technology we were able to increase the power rating of the amplifiers while reducing heat dissipation. This also allowed us to remove the cooling fans, which were required for the older models.

We decided to use SMPS modules because the space requirement for such designs is far smaller than that of a fully regulated linear power supply based on transformers. (A fully regulated linear supply would have more or less the same dimension as the amplifier itself!) Another big advantage of SMPS technology is that, because of its efficient power-factor correction (PFC), the supply will not "pollute" the mains with harmonic overtones. Linear power supplies with big transformers and rectifiers can easily feed current spikes of 15–20A or more back into the mains. The absence of this "noise" is a big advantage for the performance of other components in the playback system.

The distribution of power within the amplifier is also a key to optimal performance. The smaller form factor of the SMPS modules allowed a much better arrangement of components, which reduced the cable interfaces between the boards and parts dramatically. (The power distribution within the power supply itself is done with massive copper bars and with a multilayer PCB with 3000-micrometer copper traces in its central layer.)

"THE FUNDAMENTAL CHANGE IS THAT WE ARE USING A NEW SWITCHED-MODE POWER SUPPLY THAT IS FULLY REGULATED. AS A RESULT THE SUPPLY VOLTAGE REMAINS PERFECTLY CONSTANT IRRESPECTIVE OF THE MUSIC SIGNAL TO BE AMPLIFIED."

Custom-made storage capacitors with ultra-low ESR and more than 1,000,000 microfarad capacitance ensure that current peaks, required for heavy bass transients, can be reproduced with highest fidelity. Due to the higher stability of the output voltages we were able to increase current delivery from 60A to 120A for the new amplifiers, which leads to higher peak power ratings. Thanks to the simplified structure of the SMPS, with fewer boards and less interfaces, we were able to optimize grounding as well.

Although we haven't changed the audio circuits at all, the new power supply technology does change their performance significantly. The operating conditions for the audio circuits have been improved dramatically; consequently sonic performance has been, too.

What are the fundamental differences between the 720 and the 725 preamplifiers?

Again, the power supply unit for the analog circuits have been redesigned, although the analog circuits of the preamplifier remain unchanged. Due to the lower power requirements of preamplifiers compared to amplifiers, there was enough space available within the 720 preamplifier for a fully regulated linear design. We didn't change this

fundamental concept (no SMPS); however we did bring the quality of power-supply regulation to a much more advanced level.

In the new power supply all three regulation stages use high-precision and ultra-fast audio-grade operational amplifiers. The power regulation is done more quickly and more precisely at the same time. The output voltage is far more stable with lower residual ripple. The last stage is actually a small power amplifier, highly biased towards Class A. For best performance the idle current of this stage gets precisely adjusted during the manufacturing process.

For superior reproduction of transient signals the 725 power supply uses custom-made capacitors with more than 580,000 microfarads of capacitance.

The changes in technology to the 725's power supply seem subtler than what the ones we made for the 701/711 power amplifiers; however, the improvement in sound proved to be at least as significant.

Is Soulution still advocating a high-speed, high-feedback approach to circuit design in amps and preamps? Or have you changed or improved upon your approach?

As I previously said, the audio sections of the 701/711 power amplifiers and the 725 preamplifier haven't been changed. Their specifications are still exactly the same as those of the older models. However, because of the large improvement in the "quality" of the supply voltages, the circuits are now better able to reveal their full potential.

Both the new and the old power amplifiers work with close to zero (0.1dB) global negative feedback (where we have just 1MHz of bandwidth of work with), but we use a lot of negative feedback in the local loops (where bandwidth goes up to 200MHz). The speed of the feedback loop is absolutely key for best sonic results.

In our original 700/710 amplifiers, voltage fluctuations in the power supply to the power transistors of the output stage were compensated for by the global negative feedback loop. This worked quite effectively, although the feedback loop had to intervene more actively the higher the fluctuations were. The 1MHz bandwidth of the global-feedback loop, usually considered very high compared to the audio bandwidth of 20kHz, turned out to be way too low not to have any sonic impact. This was exactly why we applied very little negative feedback in the global loop, although it also implied that every deviation that got corrected by this loop would have a sonic impact. By improving the performance of the power supplies in the 701/711 (and effectively eliminating voltage fluctuations to the power transistors), we actually made the global feedback loop more or less redundant. The sonic improvement is quite impressive.

The structure of the feedback loops of the 725's output stage is very similar; therefore, we achieved the same result by improving the power supply.

Your electronics are famous for measuring superlatively well, but what role does listening play in the development of your amplifiers and preamplifiers. Are they voiced primarily by ear or by test? And if by ear, who does the voicing?

The final decision on whether a new product is ready for the market is always made after extensive listening tests. However, we would never consider a product ready for the market if its measured results were not perfect. The truth is that the tests usually made on amplifiers present no real challenges. Reproducing a continuous sinewave into a non-complex load at moderate power levels is quite an easy task. If any amplifier failed to reproduce such signals without adding distortion or other deviations, how could it possibly get things right when confronted with real-life music? So, if the measured results are not perfect, we don't even listen to the product. This does not imply that good measurements automatically translate into good sound—not at all—but they are prerequisite. This said, there are many decisions to be taken during the development of an audio product wherein today's measurement methods cannot reveal any significant results. Such decisions are, of course, made by listening to the product.

At Soulution, we have a team of five experienced listeners who do the auditioning and comment on the products. Each of us has very different listening skills and reacts more sensitively to certain aspects of music reproduction rather than to others. The decision that the product is ready is only taken if all five of us are happy with the

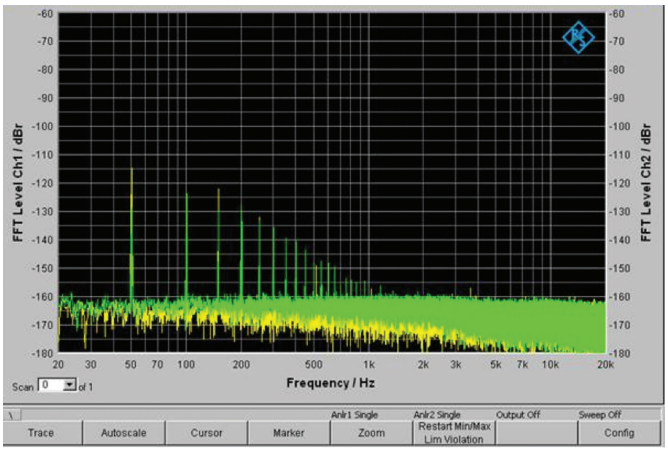


Fig. 1. 710 noise-floor measurement (FFT with no input signal, reference 0dBu input signal).

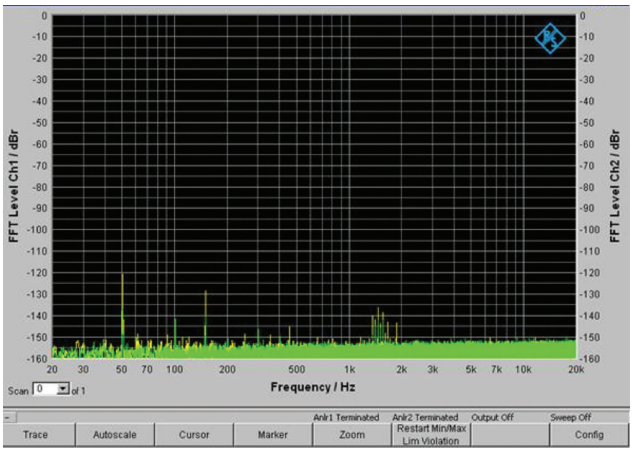


Fig 2. 711 noise-floor measurement (FFT with no input signal, reference 0dBu input signal).

results. As you can imagine tastes in music are very different within this group; therefore, we listen to many different kinds of music, and not necessarily audiophile recordings. Just lately we have been listening to recordings from the Garcia-Fons Trio, Leonard Cohen, Mercedes Sosa, Rodrigo y Gabriela, etc., etc. In general we use all formats—vinyl, CD, and high-res files.

Your switched-mode power supplies have made a huge difference in sound, particularly in the bass. What led you to take this approach? How did you successfully vanquish switching noise? And are there any downsides to switch-mode supplies?

We were convinced that a regulated power supply would be an advantage for any amplifier. With the switched-mode technology we got the opportunity to build such a device that also fitted into our existing designs. In fact a 700/710 owner can upgrade his units to the new versions by "simply" exchanging the power supply unit, without any loss in performance compared to the new models. This was very important to us, as the 700/710 amplifiers haven't been on the market a very long time, and we didn't want to devalue products that had recently been purchased.

The switched mode power supply modules used for the Soulution amplifiers switch at 70kHz; therefore, potential noise artifacts are rather high-frequency, well beyond the audio band. However, the effect SMPS's might have on the MHz bandwidths *within* the amplifiers had to be taken into consideration. Thus, the SMPS modules are shielded against radiation and an optimized filter blocks noise transmission on power lines.

Inducing high-frequency noise is generally seen as a major downside of SMPSes, when, in fact, it is far more difficult (if not impossible) to reduce the impact that big transformers have on the audio band. We did take a lot of care to keep the influence of the transformers at a minimal level in the 700/710 power amplifiers, but noise-floor measurement clearly shows the impact that the magnetic fields of the transformer have when they get picked up by the analog circuits.

With -115dBr at 50Hz and falling amplitudes for the harmonics, this design can be considered as state-of-the-art. (All amplifiers with big transformers will show a similar behavior.) However, everybody would agree that it would be even better if the power supply did not induce any noise at all.

The noise-floor measurement of the 711 proves that this can be achieved with our new power supply technology. There is still some noise at 50Hz—for auxiliary voltages we still use transformer-based power supplies—but the amplitudes of the harmonics are dramatically reduced, if existing at all. At the same time this measurement also shows that there is no switching noise whatsoever in the audio band.

In our opinion SMPS units do not have any downside. Unfortunately, their reputation among audiophiles is not very good, and our decision to move to SMPS was criticized fiercely. In the past the technology had been used to reduce the manufacturing cost and the space requirements of the power supply, while compromising on sonic quality. This is *not* the case for the 701/711 amplifiers. The power supply is bigger and considerably more expensive than the transformer-based power supply of the 700/710 amplifiers, and it clearly outperforms the older design.

Your new electronics are warmer and richer sounding, without any losses of speed, resolution, or control for which your electronics are famous. Why?

We paid a lot of attention to the distribution of the power within the product itself. The starting point of the output signal of any audio product is the power supply. Any improvement in this "signal" path will immediately improve the performance of the rest of the circuit. As the analog circuits remained the same, they still do what they always did but simply do it much better.

What does the future hold for Soulution electronics?

We are currently working on a new digital source product for the Series 7 and we do have a lot of requests for a product line below our Series 5. As soon as these products are ready we will let you know. tas

SOULUTION 711 STEREO AMPLIFIER,
701 MONOBLOCK AMPLIFIER, AND
725 FULL-FUNCTION PREAMPLIFIER

ROBERT HARLEY LISTENS TO THE SOULUTION 701 MONOBLOCK POWER AMPLIFIERS

Previous generations of Soulution electronics had been described to me in such superlatives (by Jonathan Valin and others whose ears I trust) that when I was offered the opportunity to hear the company's massive new flagship 701s in my system, I jumped at the chance. The 701s embody the technical innovations Jonathan described in his review of the 711 amplifier, but taken to the extreme in the $155,000-per-pair 701s. Consider the specs: 600W into 8 ohms, doubling to 1200W into 4 ohms. THD+N is an astonishingly low 0.00015%. The 701 can swing 70V across a load and deliver 120A of instantaneous current. The output impedance is an ultra-low 0.002 ohms. Each amplifier is accompanied by a laminated sheet of paper containing six plots of the amplifier's performance, including an FFT of the distortion products, THD vs. power output, and a plot of the amplifier's noise floor.

I've never encountered an amplifier with this kind of technical performance, but I'm not one to be swayed by numbers. Nonetheless, these specs suggest that something different is going on inside Soulution amplifiers, and the 701s in particular.

The 701s sheer size and weight (176 pounds each) make them physically imposing in the listening room. Their appearance is decidedly businesslike—they give off the vibe of a laboratory instrument, not a piece of luxury goods. That's not to say that the 701s are unattractive or utilitarian, but rather that their mission as a reference-grade music-reproduction device takes precedence over ostentatious bling. You won't find superfluous engraved and gold-plated front panels on Soulution gear.

Most power amplifiers are fairly empty inside the chassis. There's a power transformer, some filter capacitors, the input and driver board, and the output stage consisting of heat sinks to which the output transistors are attached—with plenty of open space around each of these subsystems. But look at the inside of the 701s and you'll see a different story. Nearly every cubic inch of the enormous chassis is packed with circuitry. This is an extraordinarily complex piece of electronics.

Literally within seconds of hearing the first piece of music through the 701s, right out of the crates with no warm-up, I was taken aback by just how different the 701s were than any other amplifier I'd heard. The first character that struck me, and still strikes me every time I listen to music through the 701s, was the amplifiers' sheer dynamic verve and assertive immediacy. Do you know that unmistakable quality you hear from horn loudspeakers of "jump factor," lifelike presence, and boldness of presentation? That's what the 701s sounded like. The 701s are no shrinking violets with a polite and reticent character. Instead, these are amplifiers that unleash their seemingly unlimited potency to convey music's fully dynamic expression.

As the 701s settled in, and with the 725 linestage added several weeks later, the 701s' dynamic flair reached its full glory. And glorious it was to hear well-worn music reproduced with unimagined dynamic impact, rhythmic nuances, and grab-you-by-the-shirt transient bravado. The 701s would be worth the price of admission if this dynamic expression were confined to a single instrument—a drum kit. The suddenness of the transient produced by the stick hitting the head, the weight behind that impact, the depth of the resonance of large mounted tom-toms and floor toms, and the sheer visceral excitement the 701s bring to the table elevated the music to a whole new level of immediacy and vitality. You don't just hear the drums, you feel their physical impacts to the core of your body. Part of what makes the 701s so faithful to the sound of a drum kit is not just the speed of attack, but the massive weight behind the transients. In this regard, I've never heard an amplifier that even approached this combination of speed, heft, and seemingly unlimited dynamic headroom.

The drum kit is just one obvious manifestation of the 701s' dynamic abilities, but these qualities that rendered drums with such lifelike immediacy extended to every aspect

of the presentation. Instrumental entrances seemed to appear out of nowhere with startling presence and attack. On the track "You're Driving me Crazy" from Dick Hyman's *From The Age of Swing* (176kHz/24-bit from the Reference Recordings HRx sampler), the piece begins with a gentle piano introduction accompanied by bass and mostly cymbal and hi-hat work on the drum kit. And then when the brass and woodwinds enter in unison playing a series of two-note "punches" before going into the melody, the effect is physically startling, just as a big band can be in life. Bass drum in orchestral music, reproduced by the Magico Q7's four 12" woofers and two 10" mid-woofers loaded in a sealed and totally inert 750-pound structure, had such startling impact and depth that more than a few visiting industry veterans jumped out of their chairs when they heard the first bass-drum impact.

But I enjoyed the 701s' unique dynamic presentation for much more than sonic joy rides. The dynamic qualities weren't just manifested as blunt power, but also as subtlety of rhythm and micro-dynamic details. These amplifiers consistently delivered, over a wide range of familiar music, a much more interesting and involving impression of the musicians' rhythmic expressions. I've been a fan of pianist Chick Corea since my late teens. One aspect of his greatness is his comping during other band-members' solos, a special talent that got the world's attention with 1973's *Light as a Feather*. As brilliant as Corea is harmonically, the 701s revealed a rich tapestry of rhythmic nuance and subtle dynamic inflection in his playing that more vividly conveyed the Latin underpinnings of much of his music. In addition, the sense of the piano as a percussion instrument was emphasized, so startling were the attacks. This wasn't the result of an unnatural etch on transient leading edges, but rather from the way the 701s conveyed, uniquely, the sense of explosive force you hear from a live piano.

Lightning-fast reflexes coupled with iron-fisted brute-force power are just one aspect of the 701s' uniqueness. These amplifiers also convey a vivid palette of tone color. Instrumental timbres are reproduced with a visceral body and density that can make other amplifiers sound slightly bleached, like an overexposed photograph. The Soulution amps' rendering of tone color (coupled with the dynamics just described—a potent combination) bring a physicality to music reproduction that thrills on so many levels. The amplifiers break down the barrier between the playback system and passive observer, not just inviting the listener into experiencing the musical expression, but compelling it.

The 701s' reproduction of the bottom octaves is like nothing I've heard before from a hi-fi system. The word "weight" doesn't begin to describe the 701s' center-of-the-earth solidity, muscularity, effortlessness, and seemingly unlimited reserves. The bottom end, though big, swings with a lithe agility that belies its heft. This combination of clarity, dynamics, and immense power in the bottom octaves is particularly satisfying on bass guitar, adding to the way the 701s make music more physical and visceral rather than purely emotional or intellectual.

Finally, the 701s are unique in my experience in that they never sound strained or perturbed by complex music or high playback levels. They sound just as cool and composed when reproducing an orchestra playing complex music at full-tilt as when reproducing a voice accompanied by acoustic guitar. When the music becomes loud and dense, the 701s don't exhibit the common traits of a thickening soundstage, hardening of timbre, or compression of dynamic peaks. It's as though the 701s remove some previous limit on how an amplifier behaves under the most demanding conditions.

The Soulution 701s are the kind of component that comes along only once in a great while to redefine what's possible in the category. These are amplifiers that come with no qualifications or caveats as to music types or listening biases—I can't imagine anyone not being swept away by their sheer sonic beauty, spectacular bottom end, and utterly thrilling dynamics. tas

SPECS & PRICING

Power output: 600W into 8 ohms, 1200W into 4 ohms at 0.1% THD
Frequency response: DC–2MHz
Input impedance: 2.3k ohms
Input sensitivity: 1.38V RMS
Gain: 32dB
Output impedance: 0.002 ohms
THD+N: <0.00015%
Signal-to-noise ratio: 101dB
Damping factor: >5000
Slew rate: 200ns
Dimensions: 560mm x 306mm x 585mm
Weight: 76kg each
Price: $155,000 per pair

Associated Components
Loudspeakers: Magico Q7
Analog: Basis Inspiration turntable, Air Tight PC-1 Supreme cartridge
Phonostage: Simaudio 810LP
Interconnects: MIT Oracle MA-X, Transparent Reference XL, AudioQuest WEL Signature
Loudspeaker cables: MIT Oracle MA-X SHD
Digital cables: Wireworld Platinum Starlight USB, Audience Au24 SE USB, AudioQuest Eagle Eye (BNC), AudioQuest Wild (AES/EBU)
Digital Source: Berkeley Alpha Reference Series DAC, Berkeley Alpha USB, MacBook Pro running Pure Music
AC power: Four dedicated AC lines, Shunyata DPC-6, Triton, Talos, Cyclops, and Typhon conditioners
AC cables: Shunyata Alpha Digital, Alpha HC, Anaconda, Cobra
Racks: Stillpoints Ultra
Amplifier stands: Critical Mass Systems Maxxum
Isolation: Stillpoints Ultra 5, Ultra SS, and Ultra Mini; Critical Mass Systems Rize; Shunyata cable elevators
Acoustics: ASC 16" Full-Round Tube Traps, ASC Tower Trap, Stillpoints Aperture panels