

THE CUTTING EDGE



Souldution 710 Stereo Amplifier, 700 Monoblock Amplifier, and 720 Preamplifier

The Amp That Wasn't There

Jonathan Valin

I've listened to a lot of audio equipment over the years, but I can count on one hand (without using all my fingers) the number of times I've heard something that was fool-me realistic. The first time this happened—way back in the early seventies—was when I auditioned the Magneplanar I-U's (still my all-time favorite Maggies) with Audio Research electronics and got tricked into thinking I was hearing an actual grand piano being played behind the “decorative screens” at the far end of the room. (The screens were the Maggies, of course, but back then I didn't know they were loudspeakers.) The last time this happened to me was about a year ago when I listened to Steve Hoffman's remastering of Joni Mitchell's *Blue* [Warner] and heard the way her backup vocals had been potted into the mix with such clarity that I felt as if I were standing in the engineering booth alongside the mastering engineer, listening to him mix the multi-track mastertapes down to two-channel work parts. It wasn't the same experience as the Maggie/ARC of years past. I wasn't being fooled into thinking that an actual instrument was “there” in the

room with me; instead I was being fooled into thinking that I was “there” at the mixing sessions, listening to recorded instruments being played back and mixed from separate tracks. In neither case was I aware that I was listening to speakers and electronics. All sense of hi-fi simply vanished.

If you've been following my other reviews in TAS or my blogs on our Web site, AVguide.com, you already know that the speakers I was listening to *Blue* on that day were the sensationally transparent MartinLogan CLXes and that the amp and preamp were two then-entirely-new-to-me solid-state wonders from an upstart Swiss company called Souldution.

I first heard about Souldution (the name is a Motown-like concatenation of “soul” and “solution”) from solid-state amp maven and loudspeaker-designer extraordinaire Alon Wolf. Souldution was not a company I was familiar with and when I looked it up on-line and discovered that it was a division of 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, I thought. Then I chanced upon a rave review of a Soudation product—the 120Wpc dual-mono Soudation 710 stereo amp—in the usually 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.

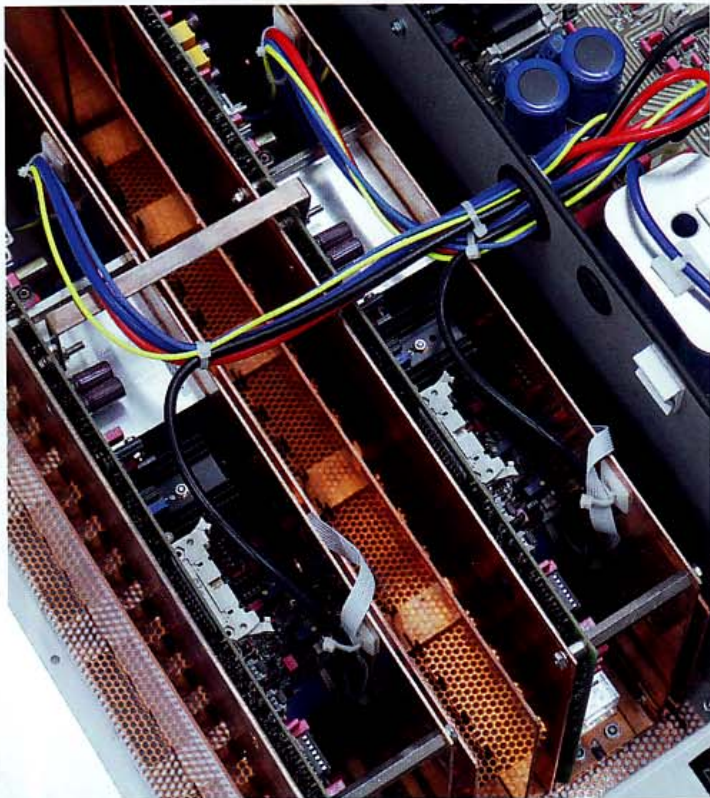
Of course, some of us remember (at least some who go back that far) those Japanese solid-state amps from Sansui and others that also boasted record-low THD figures—but sounded like crap. The trouble was that to achieve such stellar specs the Japanese engineers had to ladle on so much negative feedback that the amps were virtual TIM generators. Feeding back the signal from the output in order to compare it to the signal at the input and eliminate any distortions 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 the output to is no longer the same signal that was input. Think of it as a worst-case "jitter" scenario, albeit in the analog realm.

This jittery, old-fashioned, negative-feedback-fix is *not* how the Soudation 710 and its 430W monoblock big brother, the Soudation 700, work their distortion-free magic. Instead, the Soudation amps and their companion preamp, the 720, are ground-up reworkings of solid-state circuits executed without regard to cost (as any of you who buy Soudation gear will quickly find out) and with the sole object of building the best possible amplifiers and preamplifiers.

As you'll see when you read my interview with Cyrill Hammer on p. 142, Soudation is a labor of love. Though Cyrill and his partner Roland Manz own Spemot, they are also serious long-time audiophiles. Indeed, they started a small subsidiary back in the late nineties to import and distribute the high-end audio gear of a German outfit called Audiolabor. When Audiolabor went under, Cyrill and Roland hired its chief designer Christoph Schürmann to develop their own series of amps, preamps, and CD players. Costs were no object; bullet-proof sonic excellence

Design and Operation

Physically, all of the Soudation products share what I would call an austere Bauhaus aesthetic—kind of the anti-MBL/Burmester style. There is nothing fancy or gaudy about these simple, handsome, massive, beautifully machined boxes—each inset with its own glass window for readouts. They look like they're ready to go to work. All three products give you an unusual amount of control over various functions—some operated by switches and some electronically. The electronic adjustments can be read out in the windows of each component. For instance, the 720 preamp allows you to set or adjust the starting volume level, the maximum volume level, the balance, the bandwidth of each input, the gain of each input, the gain of the phono stage, the highpass filtering of the phono stage, and the brightness of the display, among other things. Both amps and preamps have switches that allow you to lift grounds. The 700 has switches for selecting bi-amp or monoblock (bridged) modes and for fan level. All three products have XLR and RCA inputs and outputs. The EU-approved plastic-covered binding posts on the amps are a pain, but...what are you going to do? A chintzy but handy little plastic remote is included, which permits you to make all of the electronic adjustments from your listening seat. Form definitely follows function here—for the most part elegantly.



was. What the boys from Dulliken were after was the inherent musicality and low time-related distortion of tubes combined with the high current/drive capability and low THD of solid-state. What they wanted, in a nutshell, was an amp with all the virtues and none of the vices of both technologies. What they wanted was an amp with no pronounced sonic signature of its own.

It took Schürmann better than half a decade to pull off this little trick. But—to kill any remaining suspense—pull it off he did. With a transparent-enough speaker and source, the Soudution amps, particularly the 710, simply aren't audible in most of the usual ways that solid-state or tube amps are audible. They aren't dark and they aren't light; they aren't warm and they aren't cool; they aren't liquid and they aren't dry; they aren't fat and they aren't lean; they aren't sweet and they aren't dour or antiseptic; they aren't great at the frequency extremes but less fully fleshed out and lifelike in the midband; they aren't flat or airless and they aren't bloated or overly bloomy; they aren't terrific on starting transients and AWOL on stopping ones; they aren't too tightly focused and they aren't loosely defocused; they just aren't. And since they aren't, speakers (at least those capable of high levels of transparency and neutrality) aren't, either.

When I first paired the Soudution 710 stereo amp and Soudution 720 preamp with the AAS Gabriel/Da Vinci 'table, Da Vinci Grandezza tonearm, Da Vinci Grandezza cartridge, Audio Tekne TEA-2000 phonostage, and MartinLogan CLX electrostats, I simply couldn't get enough of listening to the system. Every single record—even records I'd been playing for decades—was born anew. It was as if a door to a hidden room in front of the soundstage had opened and there, for all the world, sat the recording and mastering engineers, their tape machines, their mixing boards—just as clearly present as the musicians arrayed on stage, whose every nuance of intonation or fillip of technique was just as finely revealed as the miking setups and

JV Talks with Cyrill Hammer of Soudution AG

TAS: The Soudution gear sets new standards of low noise and high resolution, making it the most transparent-to-sources and the most realistic solid-state gear I've yet heard. Can you tell us a bit about the technology that has led to these breakthroughs? Particularly bandwidth and distortion?

Cyrill Hammer: For a "solid-state" amplifier design the speed (e.g., bandwidth) of amplification is one of the most important criteria. This speed or bandwidth has nothing to do with the MHz-range frequencies that can be reproduced by such an amplifier; the bandwidth is required to make the "feedback loops" of solid-state designs work properly. "Feedback loops" compare the amplified music signal at the output with the input signal. Due to the fact that the music signal is constantly changing, the time delay (propagation delay) of the amplifier must be zero; otherwise, applying feedback will add timing errors to the music signal. In other words, if the propagation delay is not zero or close to zero the "feedback loop" will be comparing apples at the output to oranges at the input.

Big solid-state amplifiers can have propagation delays of 1-5 *microseconds*. Now, the period of a 20kHz sine wave is 50 *microseconds*. Under these conditions such timing errors are significant—and they get even worse for higher frequencies. The Soudution amplifiers work with an overall propagation delay of 5-10 *nanoseconds*. This is up to 1000 times faster than other amplifiers. The voltage amplification stage—where we apply the most negative feedback—runs at 80MHz bandwidth and has a propagation delay of 1-2 *nanoseconds*. Since the timing errors of the Soudution amplifiers are negligible, this gives us the opportunity to apply as much negative "feedback" as we need wherever it is required in the amplifier without reducing sonic performance. This is how we can lower distortion to never-before-seen levels.

Our amplifiers break with much of the common wisdom about amplifier design.

TAS: The Soudution gear doesn't sound "solid-state" in any of the usual ways. It doesn't sound like tubes, either. It is its own thing. Can you tell us a bit about your overall design philosophy? What are you aiming for sonically?

CH: We aimed for an amplifier without any audible signature. The electronics should virtually disappear. Their presence should not be detectable.

Tube amplifiers have clear advantages over solid-state designs for specific criteria and vice versa for others. We tried to combine the advantages of tube designs (low feedback, natural sound, etc.) and "solid-state" designs (high power ratings, low distortions, etc.) Since we feel the amplifier should be able to provide enough power for all

dial-twiddling of the engineers. It is true that each new piece of equipment reveals certain things you haven't heard (or haven't heard as clearly) before, because each piece of gear has different timbral and dynamic emphases, different combinations of sonic strengths and weaknesses. But this wasn't like that. This wasn't a change in emphasis—a different grid laid on top of the same old map; this was a gestalt shift—the revelation of a world within a world, a huge and unmistakable step closer to the reality of a recording not just as the documentation of a musical performance but as an artifact, as a thing that was itself made, for better and worse, by artists, engineers, and hardware.

It was obvious—and this isn't always the case with products that reduce distortion—that the Soudution 710 was substantially lowering noise and, in so doing, revealing things about records and the recording process that had previously been inaudible or far less audible with even the finest competition. The 710 wasn't just taking me closer to the music, it was taking me back further in time—to what was coming through the mikes at the recording session and to how those mike feeds were subsequently manipulated (or not) in the engineering and mastering booths.

I wish I could speak with greater authority about how Christoph Schürmann achieved this new standard of transparency to sources. But I'm not an engineer and all I can do is parrot what Cyrill says in my interview with him and what Soudution says on its Web site. As near as I can tell, it all boils down to speed or bandwidth.

After the specsman wars of the sixties and seventies, the received wisdom about solid-state was that negative feedback was a bad thing—only to be applied sparingly and locally. Shorter signal paths and fewer parts were good things. Schürmann and Soudution have turned this conventional thinking on its ear. Together they 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, the graininess and edginess that feedback engenders, you have to make those feedback loops correct errors instantaneously. This means that circuits must operate at incredibly high speeds and with incredible precision. Forgetting about shorter signal paths and fewer parts, Schürmann apparently 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 1–10 *nanoseconds* (billionths of a second), where big solid-state amps typically have propagation delay times of 1–5 *microseconds* (millionths of a second). This thousand-fold increase in speed allowed for an increase in negative feedback (and a drastic lowering of THD levels), without the usual price paid in time-domain errors.

One result of Schürmann's new thinking is greater complexity. Soudution's power supplies (there are ten separate ones) and circuits are unusually complicated—Schürmann is reported to have proudly proclaimed that the 710 all by itself uses over 3000 parts. While this may not seem like a thing to brag about from a simpler-is-better vantage, there is no question that his unconventional design achieved its goal. As I noted above, the sonic gains are obvious and the measured results are phenomenal (even better than what Soudution claims). In the 710 stereo amp, THD is well below 0.0006%, the signal-to-noise ratio is well above 108dB, channel separation is an astounding 86dB, damping factor is above 10,000, slew rate is 330V/ns, and power bandwidth

loudspeakers potentially hooked up to it, we decided to use solid-state circuits.

TAS: The Soudution products are extremely expensive. Can you tell us a bit about the build- and parts-quality and how they play into your pricing?

CH: The amplifiers are very complex products that use many parts, some of which are very expensive. The machining and surface treatment of the housings are very difficult to execute, as well, in order to achieve the required quality. Additionally, Soudution amplifiers are built in small quantities, which also drives the price up. Taking these factors together we end up at very high retail prices. However, we are convinced we deliver a product which rewards the client with top-quality sound and is worth the price asked.

TAS: Your company is relatively new. How did you get into the audio business and what are your long-term goals? For instance, are you also going to build a speaker? Also, tell us a bit about your design team. Who are they? What are their backgrounds—and yours?

CH: Soudution products have been available for three years, although product development for this project started in the year 2000, nearly ten years ago. Our parent company—Spemot AG—has been in operation for better than 50 years, successfully active in the development and production of electric motors and electrical appliances. We decided to start the audio business partly because we wanted to diversify the business portfolio of Spemot AG and partly, of course, because Roland Manz and myself (the owners of Spemot AG) have a longstanding interest in high-end audio equipment. In 1997 we began our audio business with the distribution of German brands in Switzerland. Among them was Audiolabor. Unfortunately Audiolabor went out of business due to financial problems. This gave us the opportunity to hire Audiolabor's chief engineer, Christoph Schürmann, and start the Soudution project. Our long term goal is to create a strong and well-known brand for luxury high-end audio products. Our focus is clearly on electronics. We do not intend to do anything in the field of loudspeakers.

The design of the electronics is done by Christoph. For the design work of the housings we use our existing design team from the motor/appliances design department at Spemot. Christoph worked for Audiolabor for many years; before that he was active as an audio engineer in several domains.

TAS: Your 720 preamp incorporates an excellent phono stage, making it one of the very few "full-function" preamps left on the market. I know you are (rightly) proud of your phono stage. Can you tell us a bit about its design and capabilities? Also, you are planning an outboard (stand-alone) phono stage. How will it differ from the phono stage built into the 720?

CH: First, yes, we are introducing a stand-alone phono stage, the 750. The core amplification stage of the 750 is identical to the phono section built into the 720. However, since we have

extends from DC to 1MHz. (And these figures are even more mind-boggling in the monoblock 700 amplifiers.) The upshot: You hear more of *everything*.

Now I have to admit that some listeners might not want to hear this much information this clearly. It's not that it makes the presentation overly "analytical"—dreaded word—but rather that it reveals artifices (like 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 gloss over, and that the musicians and recording and mastering engineers probably didn't want or intend for you to hear this plainly. While I reveled in this wealth of detail for all the previously unheard subtleties of music, performance, and recording that were revealed, 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.

I didn't. What the 710 was was utterly neutral, utterly grainless and distortion-free, astonishingly quick on starting transients and detailed on stopping transients without ever sounding sharp or etched, standard-settlingly high in resolution, standard-settlingly transparent to sources, phenomenally well defined in the bass and treble with superb grip and extension from bottom to top, extremely wide in soundstage (albeit a bit more forward than some transistor amps), unusually natural in imaging (both in size and dimensionality) for solid-state, and less "there" as a piece of electronics than any other amp I'd tried.

Listening through the 710 does require a bit of a sonic adjustment. It is not an amp you would ever call warm—or cold, for that matter. It just doesn't have a color of its own; like glass or water it has the color of what you see through it or reflected by it. If a recording is highly manipulated, "hot," "dull," "dry," or "gorgeous," it will tell you this with the added bonus of telling you *why* this is the case (by revealing everything that a piece of vinyl or polycarbonate can retain of the recording/mastering process). It is like a laboratory instrument for audiophiles who want to hear all that can be heard.

The 710 is a dual-mono stereo amp; the Soullution 700s are dual-mono monoblocks. By this I mean that each 'block holds what amounts to two 710s that can be bridged (via a supplied piece of hardware) for almost four-times the power of a 710 stereo amp, higher bandwidth (DC to 2MHz), and even lower distortion; the two amps inside each monoblock chassis can also be run separately if you choose to bi-amp your speaker.

Even though the technology is precisely the same, the 700 doesn't sound exactly like the 710, even when you're using it in bi-amp mode (i.e., when you're using it as dual 710s). It has what I guess you could call a bit more of its own signature. It is slightly but noticeably plusher in overall balance—less purely objective—than the 710. The greater body and density of tone color that the 700 adds isn't anywhere near marked enough to constitute a coloration; it is much more like a bias, a "leaning" toward a slightly different, slightly more *gemütlich* kind of colorless neutral—rather like a superb lens equipped with an 81A warming filter. At the same time, the 700 is every bit as distortion-free, finely detailed, and supremely transparent to sources as the 710 (all that you hear through the 710 you'll hear through the 700, only it'll sound a

more available space, the input section and the output section have been designed with fewer restrictions and compromises. The 750 provides several functions like a mono-switch, a mute, an attenuation-selector, multiple inputs, and the option for moving-magnet cartridges that are not available in the 720's internal phonostage.

TAS: You seem to have a healthy respect for tube gear. How have the virtues of tubes played into your design philosophy. Do you plan to make a line of tube products?

CH: It is true that we did spend a lot of time on the question of which are the best active components for amplification. The result of that study was that there is no one component that combines all the required virtues without showing deficiencies. Vacuum tubes are very fast, and they are stable without the necessity of applying negative feedback loops. Their drawbacks are "weak" current ratings, questionable long-term stability, enormous waste-heat generation, etc. Transistors have high current ratings, they have very low parameter drifts over time, and they can be very fast. Their drawback is that for high-current ratings a negative-feedback design is required (potentially producing time-domain errors).

At first glance there is seemingly no practical way out of this dilemma. Either you go for tubes with very small errors in the time domain, while accepting higher distortion levels and lower current ratings, or you go for a solid-state design with higher current ratings and lower distortion levels and tolerate errors in the time domain. Theoretically, however, this dilemma is very easily solved. The errors in the time domain in solid-state designs do not come from the transistor itself but are induced by the "poor" design of the required negative-feedback loop. The magical word is speed (bandwidth). Once the amplification is done without any time delay from input to output (i.e., propagation delay = zero), you can apply as much negative feedback as you wish without inducing any errors in the time domain. This seems to be a simple fix, but it took a very long time and a lot of hard work to make a functional amplifier with propagation delays of a few nanoseconds. The commonly known topologies of solid-state amps simply do not work under these conditions. The power supply units have to operate at a level of accuracy previously unheard of in audio designs in order to make the gain stages work properly, etc., etc.

Higher current and lower distortion are the reasons why we chose a solid-state design for our amplifiers. A similar design with vacuum tubes would not have been possible. This is not to say that there aren't tube amplifiers on the market that sound really great and obviously many audiophiles prefer the sound of tubes over solid-state. Some of these tube fans might eventually change their minds if they listened to the Soullution amplifiers, but in the end it is also a matter of personal taste. We clearly prefer the purity and transparency of our amplifier design.

Today the Soullution brand stands for state-of-the-art solid-state designs. We do not want to weaken that position. Apart from that we do not have any experience in the domain of tube designs.



little friendlier and more *human*), with the bonus of even bigger and fuller and more powerful bass, a wider soundstage, larger more “bloomy” and dimensional images, and more reserves of power—rather like a solid-state version of an ARC 610T with lower grain, lower distortion, higher transparency, better grip in the bass and the treble, and slightly less dimensionality, air, and bloom (though *not* less density of tone color and texture) in the midband.

BTW, if you’re wondering why I’m not loading this review with musical examples of the Soudutions’ excellence, it’s because I’ve already done it—in every review I’ve written since the 710, 700, and 720 arrived in my home almost nine months ago. All those little sonic details I’ve remarked on—the tremolo of Alison Krauss’ voice on “Forget About It,” the glycerin sound of the harps doubling the plucked basses in the Passacaglia of Lutoslawki’s Concerto for Orchestra, the utter realism and startling comprehensibility of every word those high lonesome backup singer-shouters utter on Levon Helm’s *Dirt Farmer*, the cleaning up of Leon Redbone’s foghorn delivery on “Oh, Sweet Mama, Papa’s Getting Mad” (and the sound of his mike preamp clipping), the clear resolution of every whispered word that Ricki Lee sings in the refrain of “Walk Away Renee,” the fabulous colors, transients, and decays of Attila Bozay’s *Improvisations for Zither* (the zither equivalent of Jimi Hendrix’s “Star-Spangled Banner” and one of the best audiophile test records I’ve ever heard), the incredible bullroarer sound of the bowed bass drums in John Cage’s *Third Construction*, etc., etc., etc.—were all brought to you (and me) courtesy of Soudution. It has been a treat almost beyond compare (although I *am* going to compare the Soudution gear, over the next few issues, with some other contenders for the solid-state crown from BALabo and Technical Brain, as well as with the latest tube gear from ARC).

For music lovers who want to hear it all with a bit more natural warmth and body than the 710, the Soudution 700s may be hard to beat, although I guess I should note that I tend to prefer them (at least with the Magic M5s) in bi-amp rather than in monoblock (bridged) mode, where to my ear they lose a *tiny*

bit of their refinement, although they do gain considerable “oomph.” (I should also note that other experienced listeners feel just the opposite, so this may be a speaker- or listener-dependent choice.)

As for the Soudution 720, it sounds almost exactly like a preamp version of the Soudution amps—and for good reasons. Technically, it *is* almost another Soudution amplifier—a reviewer in a German hi-fi magazine pointed out that the 720 was capable of putting out 3A, making it suitable, all by itself, to drive loudspeakers! Like the amps it uses speed and bandwidth to lower distortion and raise resolution. The thing is a wonder of ingenuity and attention to detail. The volume control, for instance, uses a discrete-resistor network comprising eighty 1dB steps. To avoid sending switching transients through Soudution’s incredibly wideband amps as the volume-control wiper passes over the contacts of these resistors, the volume control inaudibly switches itself out of the circuit as soon as you touch its knob (or the up/down buttons on the supplied remote). Changes in level are handled, instead, by a chip—called a Programmable Gain Amplifier by Soudution. This PGA chip immediately duplicates the level you have selected in the resistor network and, within three seconds of your releasing the knob or remote pushbutton, switches over to the chosen resistor. The result: no transient noises, no wear on contacts, no intermediate steps.

As a linestage the 720 is virtually without color. Like the 700 amp, it is biased slightly toward the *gemütlich*, adding the same touch of natural timbral warmth and body that the monoblock adds, without sacrificing neutrality, resolution, or transparency to sources. The thing has terrific bass—big, powerful, bloomy, tremendously deep-reaching, and tremendously solid and well-defined. Its midrange resolution is as fine as any piece of electronics, tube or transistor, I’ve heard—nothing seems to escape it, though it does not sound at all analytical. (While not as bloomy or airy in the mids as the Audio Research Reference 5, the 720 is not without bloom or air and is as detailed in timbre and texture as the great ARC unit.) Its top end is reminiscent of the Magico M5 in that you’re not aware it’s there until something with

treble energy shows up. Tone color is as beautiful as the recording/mastering allows. Staging, ditto, although the thing can really go wide, tall, and deep with the right discs.

The 720 is a full-function preamp, meaning it has a built-in moving-coil phonostage. Unlike some contemporary full-function preamps, Soudution's phonostage is an all-out effort—not a chip or an itchy-bitsy circuit board screwed to a side panel or plugged into some pins. As solid-state phonostages go, it is as exemplary as the rest of Soudution's gear—a model of power, control, transparency, and resolution, with particularly stunning bass. While I think it adds a slight tinge of darkness to the overall sound, which isn't there with the linestage, other listeners disagree. Personally, I prefer the bloom, light, and air of tube phonostages, like the ARC Reference Phono 2 (which mates up beautifully with the 720, BTW), but I can see where many would opt for the low-end grip, very low noise, solid imaging, full-bodied timbres, and very quick transient response of the Soudution phono. (I should note that, at a maximum of 60dB, the 720's phonostage has barely enough gain for really low-output moving coils, such as the Da Vinci Grandezza or certain Ortofonos. They'll work, but you gotta run the volume control almost full-out. The phonostage will not function with higher-output moving-magnet or moving-iron cartridges.)

In my interview with Alon Wolf in Issue 196, I said that I thought there were three types of listeners (though these types tend to overlap): first, those who primarily want recorded instruments and voices to sound like live music—what I call the “absolute sound” type; second, those who want to hear exactly what has been recorded, whether it's lifelike or not—what I call the “fidelity to mastertapes” type; and third, those who could care less about the absolute sound or mastertapes and just want to hear their music sound thrilling and beautiful—what I call the “as you like it” type. If you fall, primarily, into the second group—the fidelity-to-mastertapes type—or if you're in the first group and lean toward the second, then Soudution is a must-listen. I have never reviewed components that are more transparent to sources (and more transparent to what the rest of your system, from front end to back, is doing to those sources). They will make recorded music sound precisely as real or as canned as the recording and mastering engineers (and your gear) allow it to sound. For me, they set new standards of clarity, neutrality, and transparency in hi-fi electronics, which is why they are my solid-state references and why the Soudution 720 preamp and 710/700 amps are this year's winners of TAS's Preamp and Amplifier of the Year Awards. **tas**

SPECS & PRICING

Soudution 710

Type: Stereo power amp
Power: 120Wpc at 8 ohms, 240Wpc at 4 ohms, 480Wpc at 2 ohms
Current: 60A maximum
Bandwidth: DC to 1MHz
Damping factor: Greater than 10,000
Signal-to-noise ratio: Greater than 108dB
THD: Less than 0.0006%
Input impedance: 47k Ohms (XLR), 10k Ohms (RCA)
Output impedance: 0.001 ohm
Price: \$40,000

Soudution 700

Type: Monoblock power amplifier
Power: 430W at 8 ohms, 860W at 4 ohms, 1560W at 2 ohms (bridged mode); 110W at 8 ohms, 220W at 4 ohms, 440W at 2 ohms (bi-amp mode)
Current: 60A maximum
Bandwidth: DC to 2MHz
Damping factor: Greater than 10,000
Signal-to-noise ratio: Greater than 108dB
THD: Less than 0.00058%
Input impedance: 47k Ohms (XLR), 10k Ohms (RCA)
Output impedance: 0.001 ohm
Price: \$115,000 the pair

Soudution 720

Type: Full-function preamp
Inputs: Two RCA, three XLR, one moving-coil phono (RCA)
Outputs: XLR and RCA
Bandwidth: DC to 1MHz
Signal-to-noise ratio: 130dB
Channel separation: 105dB
THD: less than 0.0006%
Phono gain: 54dB, 60dB (switchable)
Input impedance: 2k Ohms (XLR), 47k Ohms (RCA)
Output impedance: 2 ohms (XLR and RCA)
Price: \$40,000

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JV'S REFERENCE SYSTEM

Loudspeakers: Magico M5, MartinLogan CLX
Linestage preamps: Audio Research Reference 5, Soudution 720, BALabo BC-1 Mk-II. Technical Brain TBC-Zero
Phonostage preamps: Audio Research Reference 2, Audio Tekne TEA-2000, Lamm Industries LP-2 Deluxe
Power amplifiers: Audio Research Reference 610T, Soudution 710/700, Lamm ML-2, BALabo BP-1 Mk-II. Technical Brain TBP-Zero ver. 2
Analog source: Walker Audio Proscenium Black Diamond Mk II record player, AAS Gabriel/Da Vinci turntable with DaVinci Grandezza and Nobile tonearms
Phono cartridges: DaVinci Grandezza, Air Tight PC-1 Supreme, Clearaudio Goldfinger v2
Digital source: dCS Scarlatti with U-Clock, Soudution 740, ARC Reference CDB
Cable and interconnect: Tara Labs “Zero” Gold interconnect, Tara Labs “Omega” Gold speaker cable, Tara Labs “The One” Cobalt power cords, MIT Oracle MA-X interconnect, MIT Oracle MA speaker cable, Synergistic Research Absolute Reference speakers cables and interconnects, Audio Tekne Litz wire cable and interconnect
Accessories: Shakti Hallographs (6), A/V Room Services Metu acoustic panels and corner traps, ASC Tube Traps, Symposium Isis equipment stand, Symposium Ultra equipment platforms, Symposium Rollerblocks, Symposium Fat Padz, Walker Prologue Reference equipment stand, Walker Prologue amp stands, Shunyata Research Hydra V-Ray Mk II power distributor and King Cobra power cables, Tara Labs PM 2 AC Power Screens, Shunyata Research Dark Field Cable Elevators, Walker Valid Points and Resonance Control discs, Winds Arm Load meter, Clearaudio Double Matrix record cleaner, HiFi-Tuning silver/gold fuses