

Simaudio Moon Evolution 600i Integrated Amplifier

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- Written by Philip Beaudette



The 600i integrated amplifier belongs to Simaudio's upscale Moon Evolution line of reference-grade electronics. The first Evolution integrated, the i-7, [was reviewed](#) on *SoundStage! AV* in March of 2007 by Doug Schneider. The 600i (\$8000 USD) and its big brother, the 700i (\$12,000), represent the second generation of Moon Evolution integrations.

I've heard the i-7; it's amazingly powerful and transparent, and among the best integrated amplifiers money can buy. This apparently wasn't enough for the Simaudio engineers, who evidently like to keep developing new technologies; the 600i boasts a number of improvements over the i-7, including a better volume control, proprietary output transistors, and an input stage redesigned to reduce noise.

For example, consider that volume control. Simaudio claims that the M-eVOL2, a proprietary technology developed for the Moon Evolution line, is very close in performance to the M-Ray volume circuit used in their flagship P-8 preamp. The M-eVOL2 employs two Multiplying Digital-to-Analog Converters (MDACs), one per channel, to enable precise volume adjustments in increments of 0.1dB, for a total of 530 individual steps. Between 0 and 30dB, volume adjustments are made in 1dB increments. From 30 to 80dB (full power), adjustments are made in increments of 0.1dB, making it possible to fine-tune the volume more precisely than I'd ever before encountered. According to Simaudio, this circuit offers no degradation in sound quality, regardless of the volume to which it is set. Compared to the original M-eVOL circuit used in the i-7, the M-eVOL2 boasts a better signal/noise ratio and a subsequently lower noise floor, while also decreasing interchannel crosstalk. The volume dial is large and operates very smoothly.

The second significant upgrade included in the 600i are the newly developed bipolar output transistors, made to Simaudio's specifications by another manufacturer and thus available only in Moon models. Because there are many transistors in each channel of the output stage, care has been taken to properly match all of them to ensure signal integrity. Simaudio says that these new transistors make possible in the 600i more linear gain, a lower noise floor, wider bandwidth, and better bass response than the high-quality bipolar transistors used by their competitors -- and, presumably, than the transistors used in the i-7.

Befitting a product in this price range, the two transformers installed just behind the 600i's faceplate are no mere afterthoughts. The steel used to wind them is of the highest grade, imported by Simaudio from Japan. Although this inevitably increases the cost of production, the steel is said to be extremely pure while having minimal loss characteristics. This translates to better efficiency and lower heat loss, which in turn should lead to longer component life. Simaudio's confidence in the 600i's longevity is demonstrated by the ten-year warranty that backs it.

The Moon Evolution 600i is a fully differential, dual-mono design claimed to output 125Wpc into 8 ohms, this doubling to 250Wpc into 4 ohms, with the first 5W output in class-A. While that mightn't seem too high for a solid-state amplifier costing not far shy of \$10,000, much can be said for the fact that its output doubles as the impedance is halved. This simply means that it produces lots of current, and therefore should be powerful enough to drive most loudspeakers. Unless your speakers drop well below 4 ohms, or you listen to your music in an auditorium, or you try to reproduce the sound-pressure levels heard at rock concerts, it's unlikely the 600i will run out of juice.

As tends to be the case even with Simaudio's less expensive integrated amplifiers, the 600i has lots of connection options and many features. Around back are a fully balanced XLR input and four pairs of single-ended inputs, lined up to either side of center and reflecting the 600i's dual-mono construction. These inputs are configurable to be home-theater ready, in which case the 600i's volume control is bypassed by the volume control of an external A/V processor or source component. There is also one line-level output, configurable as fixed or variable, depending on whether it's used with a recording device, connected to a subwoofer, or if only the 600i's preamplifier section is used.

Each input is assigned a default name at the factory, but these names can be changed by the user to reflect which component is actually plugged into each input. More than 25 generic names (Aux, CD, DVD, Phono, etc.) can be selected from the Setup menu, or the user can custom-name each input. Those inputs that are *not* used can be eliminated altogether.

RS-232 and IR ports are included for custom-installation applications and firmware updates. A 12V trigger allows the 600i to be turned on remotely. With SimLink, another proprietary Moon technology, owners of multiple Simaudio components can control all of them from a single component. For example, if the user adjusts the display brightness of one Simaudio component, SimLink will automatically and simultaneously adjust the brightness of all the others.



Another feature, M-Lock, acts as a maximum-volume lockout circuit. In other words, a different maximum volume level can be set for each line input, to protect speakers from signal overload caused by switching between source components of differing output voltages. The 600i also offers gain offset, which lets you adjust the gain setting of each of the line-level inputs through a range of +/-10dB. This lets you match the gains of several source components, which is particularly useful when trying to switch back and forth between components to evaluate their performances -- ideal for a reviewer.

Also included with the 600i is the FRM-2, a full-function remote control. Made from a solid piece of aluminum, it's heavy enough to serve double duty as a device for defending your home from someone trying to steal your stereo. Seriously, it's very functional, and will also operate a Simaudio preamplifier and/or CD player. However, as much as I appreciate the build quality of a remote such as the FRM-2, it is very long and awkward to hold, even in my large hands. I prefer something smaller.

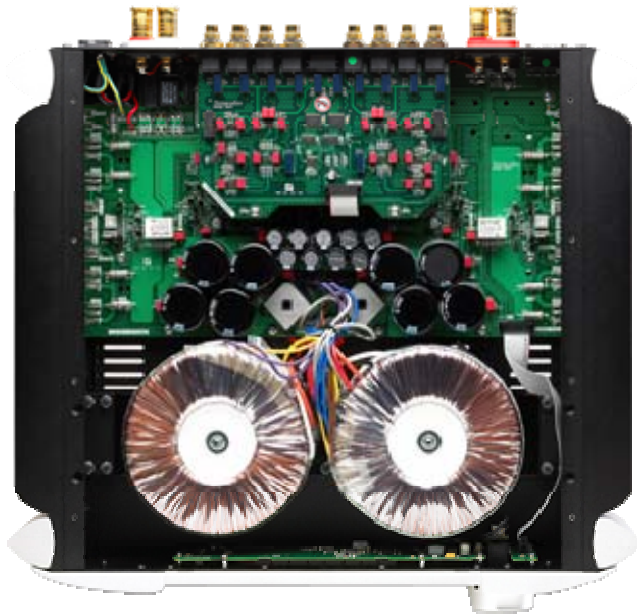
Measuring 18.8"W x 4.0"H x 18.1"D and weighing 48 pounds, the 600i is not only the most expensive integrated amplifier I've ever reviewed, it's also the beefiest. This is due in no small part to the gorgeous casework housing the circuitry, including extruded aluminum heatsinks, and triangular pillars that add weight and increase stability. It perches atop four cone feet of beautifully polished metal that rest on small metal discs -- your equipment rack won't get scratched. The high-quality, gold-plated WBT binding posts can accept spades, banana plugs, or bare speaker wire.

The front panel looks very sharp. The faceplate, in black or silver (the review sample was black), features a large alphanumeric display that can be seen from across the room. As alluded to above, the display's brightness can be dimmed, or turned off altogether if you don't want big red numbers glowing

at you. Small clusters of buttons to either side of the display control all of the 600i's functions, including balance adjustment, input selection, mute, display brightness, standby, and setup programming.

Despite my minor reservation regarding its remote, the Moon Evolution 600i is a gorgeous piece of equipment that looks like something costing \$8000. The fit and finish are perfect, and the entire package exudes quality and fine craftsmanship. The only thing left to do was to find out how it sounded.

A new reference?



The user manual suggests that the 600i needs 400 hours of play to be fully broken in, but I didn't find that to be the case. After only 10-20 hours of play, the sound opened up considerably and the 600i seemed to hit its stride. There might have been some subtle differences beyond that point, but I heard no major improvements.

One of the first albums I played after the initial break-in period was Elliott Smith's *Either/Or* (CD, Kill Rock Stars KRS269). What immediately struck me when listening through the 600i was the exceptional clarity and power in the bass in "2:45am," a song I've heard countless times. The drum kit had such heft and presence that the music filled the room effortlessly, wrapping me in a blanket of sound that was totally immersive. The quality and the quantity of the bass were beyond reproach, and left me wanting for nothing. The soundstage was large and well defined, with a good sense of depth, while Smith's voice was placed with pinpoint precision, and the sort of lucidity that gives the impression that the singer is in the room.

Moving on to another Smith tune, "Riot Coming," from *New Moon* (CD, Kill Rock Stars KRS455), I marveled at how clearly I could hear the sound of Smith's hand striking the wooden body of his acoustic guitar. The precision with which the strings resonated was uncanny, sounding as detailed and clean as I've ever heard. I think the 600i might have a lower noise floor than any integrated amplifier I've ever reviewed. At about this time I began to wonder if the reproduction of recordings could get much better than what I was hearing. During my time with the 600i, I found myself thinking about this more and more.

I tend to favor electronics that are very quiet and therefore highly revealing, which is why I've always used solid-state amplification. Components that impart little sonic coloration of their own let me hear the recordings as they were made. Of course, depending on the quality of the recordings themselves, this can be good or bad.

When I switched from Elliott Smith to Bob Dylan, I came to discover something else about the 600i: it was dead neutral. Compared to the Smith discs, which have a warmer, more-fleshed-out sound, the leanness of Dylan's *Bringing It All Back Home* (CD, Columbia CK 92401) was immediately obvious. This album is a remarkable piece of work, but while Dylan's lyrical musings established a new benchmark in the language of popular music when this record was released in 1965, it broke no sonic boundaries. What matters here is that the 600i's neutrality told me as much, which made it a good tool for evaluating the quality of recordings as well as the other components in a system. Through this integrated, be prepared to hear everything -- and I mean everything.

The Moon 600i reminded me of the Stello Ai500 (\$3495), which [I reviewed](#) earlier this year. Both integrated amplifiers exemplify the definition of *neutral*, and did their jobs while imposing on the music very little of their own personality. Had the Stello still been here, it would have been interesting to compare them side by side.

Still in the mood for folk music, I reached for my copy of Neil Young's *Sugar Mountain: Live at Canterbury House 1968* (CD, Reprise 2-516758), and cued up "The Last Trip to Tulsa." As with the Dylan album, *Sugar Mountain* is no sonic landmark, but like most of Young's work, it still sounds pretty darn good. Some white noise in the background may be the sound of the tape on which the music was recorded. Regardless, the sound was incredible through the 600i. As I closed my eyes, Young's show unfolded in the most natural and believable way I've ever heard it (I've listened to this disc through several systems). Young's voice and guitar sounded as pure and present as one could hope for; even the most subtle nuances were reproduced with such clarity that it was easy to imagine that I was actually sitting in the audience.

I suppose if *Sugar Mountain* were played through larger speakers, the additional bass would have conveyed a greater sense of the scale of the coffeehouse where the concert was recorded. But listening to it through Amphion's Argon3s, I never felt I was missing anything. The Argon3s are exceptionally clean and transparent speakers in their own right, but the 600i seemed to extract from them their very best performance. Again I wondered whether music could sound much better, or if the Simaudio-Amphion combination defined that point on the curve of price vs. performance where spending more money might buy a different sound, but not necessarily a better one.

Then I played Loreena McKennitt's *Nights from the Alhambra* (CD, Quinlan Roads QRCDVD2-110-N CD01/02). This live set from McKennitt's tour promoting *An Ancient Muse* (CD, Quinlan Road QRCD109) was recorded in Granada at the Alhambra, which was built in the 14th century, toward the end of the Arabian occupation of present-day Spain. The concert is rather special; the venue itself helps transport the listener back to another era that is perfectly suited to the musical journey on which McKennitt and her musicians take us. *Nights from the Alhambra* places the listener in the front row at the concert, only a short distance from McKennitt herself. The transparency of the Moon 600i was breathtaking -- the sounds of McKennitt's lips moving, and the most minute changes in her voice, were revealed as clearly as day. The sound of a bow against a cello's strings was rich and full, the deep resonance of the instrument so tangible that it could have sounded better only had I actually attended the concert.

Or so I would have thought had I not attended one of the concerts on this tour when it passed through Ottawa three years ago. As much as I enjoyed hearing these songs performed live at the National Arts Centre, the sound there was no match for the more balanced sound on this CD. The NAC was a wonderful place in which to see and hear this show, but that night the percussion was a little too heavy and overblown for my tastes, despite the visceral pleasure I got from feeling the music in full swing. The energy was fantastic, but I found it tended to obscure the sounds of some of the other instruments.

When I saw the show in Ottawa, I sat in the balcony -- but *Nights from the Alhambra* puts me in the best seat in the house. Listening to this album, the listener is so close to the stage, and the background is so silent, that the stillness of that late-summer night in Spain can almost be felt. The performance is incredibly intimate, something the 600i conveyed flawlessly and without effort. It was strange, but even the quietest passages of the show seemed powerful, such was the ease with which the 600i relayed them.

I've talked at length about how utterly transparent the 600i was, and for good reason: it was exceptionally quiet. However, it's not alone in this category -- some other integrated amplifiers on the

market are also ultraquiet. Rather, it was the effortless way it did *everything* that made it so special. With well-recorded material, the highs extended to the heavens, the midrange was palpable, and the bass was firm and tight -- but never once in my auditioning of the 600i did it ever sound strained, no matter how much it was pushed.

When I played *War Dance*, from Eiji Oue and the Minnesota Orchestra's recording of the suite from Respighi's *Belkis, Queen of Sheba* (CD, Reference RR-95CD), the pounding of the drums was enough to shake my room -- yet the 600i was always in control, reproducing every nuance of this piece with ease and composure. Its dynamic prowess was beyond reproach: the 600i could go from soft to apocalyptically loud and back to soft again, all in an instant, and never sound as if it were even trying. In fact, the chassis barely got warm, despite my listening to it for extended periods at room-filling volume.

More than anything else, in my opinion, it is this effortless ease that separates the very best from the merely very good. If you've never heard anything like this, it might be difficult to imagine how any electronic component could bring such a sense of ease to the music. For example, a high-quality affordable integrated amplifier from a company like NAD or Arcam can play very loud without becoming severely distorted, but after I've been listening to those components for long periods, fatigue can set in. I never experienced that with the Moon Evolution 600i. I don't mean to suggest that its performance has no limits -- sooner or later, I'm sure, it could be driven into clipping -- but I'd be very surprised if anyone other than those with *huge* systems has ever reached those limits.

Comparison

I compared the Moon 600i with my reference integrated amplifier, Bryston's B100 SST. At \$2995, the Bryston might not seem obvious competition for the 600i, which costs almost three times as much, but it's not as unfair as the difference in price might suggest; at \$2995, one has already passed the point of diminishing returns for integrated amps.

Feature-wise, the two have much in common, with some important differences. The 600i and B100 are both dual-mono designs with commendably long warranties (ten and 20 years, respectively), lots of inputs, and rock-solid construction. However, the Bryston lacks such options as M-Lock or gain adjustment, and has no display -- you can't name individual inputs or cancel those you don't use. On the other hand, unlike the B100 SST, the Moon Evolution 600i can't be ordered with an onboard D/A converter or phono stage. If you want these features from Simaudio, you'll need to move down to the Moon i3.3 integrated.

The two integrateds are cut from similar if not identical sonic cloth. Each can produce very powerful, energizing bass that remains clean and detailed even at ridiculously high volumes, and both are wonderfully revealing, letting one hear deep into the music, warts and all. In terms of transparency, I'd give the edge to the Simaudio; I've never heard a quieter integrated than the 600i, and I've listened to my fair share.

In the latter half of "Fake Empire," from The National's 2007 album, *Boxer* (CD, Beggars Banquet BBQCD 252), a horn section enters to energize the track. When they begin, the horns are a bit buried in the mix, before coming to life and really carrying the tune. The 600i more clearly rendered the horns, as if pulling them slightly forward out of the mix. They didn't sound bad through the B100; they just stood out more and were easier to discern through the 600i.

"Fake Empire" revealed another area in which the Simaudio edged out the Bryston: the size of the soundstage the former was able to create. I suspect this may relate to its low noise floor, but whatever the reason, the 600i's stages were bigger. Music extended from wall to wall, with an impressive sense of depth. Compared to the B100, the 600i sounded more expansive, the music rounder and fuller.

Bryston's B100 SST comes impressively close in performance to the Moon Evolution 600i, achieving most of what the Simaudio can at a much lower price. But that's the crutch: the Bryston gets you most, but not *all* the way there. For the lucky few able to afford it, the 600i takes an extra step in performance above what the Bryston can achieve. It is even more transparent and can create a larger soundstage, two things that can be readily appreciated with complex musical passages that have been well recorded. As good as the B100 is, the 600i makes it that much easier to hear deep into the music and sort out what's going on. Considered on their own, these differences mightn't seem huge; taken all together, the Simaudio stands on the Bryston's shoulders.

Conclusion

If you're looking for a full-featured, reference-quality, bulletproof integrated amplifier, you would be making a mistake if you didn't check out Simaudio's Moon Evolution 600i. It's the best integrated amplifier I've ever reviewed, and as far as I can tell, it is solid-state amplification executed to perfection. At \$8000 it's not cheap, but when you consider the price of some other high-end integrateds, that price is actually very competitive. Furthermore, you get the peace of mind that comes from buying from a company that has been in existence for 30 years, and will probably be around to offer support and service should their product ever encounter a problem.

The 600i is exceptionally transparent, and sounds completely effortless in everything it does. Connect it to a pair of high-quality speakers and a decent source -- I enjoyed immaculate sound from a \$500

CD player, which goes a long way toward saying how much performance the 600i is capable of -- and get ready to pick your jaw up off the floor. If audio reproduction gets any better than this, I haven't heard it.

. . . *Philip Beaudette*

philipb@soundstagenetwork.com

Associated Equipment

- **Speakers** -- Amphion Argon3, PSB Platinum M2
- **Integrated amplifier** -- Bryston B100 SST
- **Sources** -- NAD C542 CD player, Thorens TD-160HD turntable, Rega RB250 tonearm, Dynavector DV-10X5 high-output moving-coil cartridge
- **Speaker cables** -- AudioQuest Type 4
- **Interconnects** -- AudioQuest Copperhead
- **Power conditioner** -- ExactPower EP15A