

## Vivid Audio • G1 Giya Loudspeakers

*Innovative thinking on speaker design produces a new statement in speaker sound.*

by [Marc Mickelson](#) | February 9, 2010

What you will first notice about the Vivid G1 Giya speaker, even if it is pounding out the choral finale of Beethoven's Ninth, is its shape. From the front, it resembles a bowling pin, and from the side either an elf's cap or a dollop of frosting. It's whimsical and elegant, just what so many of the massive speakers in its rarefied price range are not. But the Giya's look is not for show. It's an outward sign of some innovative engineering. The G1 Giya is a clean-sheet design -- a speaker whose deep technology aims at reproducing what's fed to it with absolute fidelity.



The G1 Giya is Vivid Audio's top speaker, with the newly introduced G2 Giya right below. All Vivid speakers are fully manufactured in South Africa and use the company's own drivers and cabinets. The G1 Giya's cabinet is not just unusually shaped; it's unusually constructed as well. Its one-piece monocoque shell is made of a balsa-cored composite sandwiched by layers of quadraxial glass fiber. Resin is literally sucked into and between these layers in a vacuum-infusion process. The bodies of racing cars and high-performance boats are constructed in this same way, and it's a time-consuming process. Each cabinet requires three days of work to complete, not including the automotive-paint finish.

The cabinet's shape is the result of research done on the propagation of sound waves outside speaker enclosures of different shapes and sizes. Curved is best for sound, so concluded the G1 Giya's designer, Laurence Dickie. If that name sounds familiar, that's because it is, at least in audiophile circles. Dickie designed the original Nautilus speaker for B&W, which is still available today more than fifteen years after its introduction. Both the Nautilus and Giya share a rounded profile that reduces re-radiation of sound waves, and the blurring this can cause, due to sharp angles like square cabinet edges.

The Giya's cabinet is also rounded internally, which, in theory, reduces the reflection of each driver's rear output. However, Dickie had different and more effective plans for addressing this. Initially, he experimented with mounting each driver at the end of a tube, which produced a predictable series of resonances that were easy to damp with fiber filling. However, this required use of a very long tube that wasn't easy to fit into a speaker cabinet. While experimenting with loading for low-frequency drivers, Dickie found that a tapered tube behaved in much the same way as one of uniform diameter, but it could be considerably shorter, especially when fiber filling was added. Thus, one of Vivid Audio's core technologies, tapered-tube loading, came to be.

If you look at the B&W Nautilus, you can see the tubes as they exit from the rear of the cabinet. There is no such visible exhaust system with the Giya -- or perhaps there is. While the tubes for the tweeter, midrange and upper-bass drivers terminate invisibly within the cabinet, the woofers make use of the speaker's defining visual feature -- the curl at the top of the cabinet. This is the outward evidence of a tapered tube -- actually, an exponential horn -- that's engineered into the cabinet for dissipating the woofers' rear output. This tube is proportionally much shorter than those for the other drivers, and it works in conjunction with the Giya's dual ports, creating an acoustic crossover for the woofers. Frequencies below 100Hz stay within the lower chamber, where the ports do their job of extending the speaker's bass, while the tapered tube harmlessly dissipates frequencies above 100Hz. The ports are special as well, working with the woofers to cancel their reactive force to each other.

Also buried within the Giya are ten fiberglass-reinforced grids placed laterally every six inches or so to brace the cabinet. The resulting structure has a high stiffness-to-mass ratio, keeping enclosure modes as high in frequency as possible, a design goal. Vivid takes a rather different approach to cabinet design and manufacture than that taken by Wilson Audio, for instance, which relies on the strategic use of special materials in order to create cabinets that are theoretically ideal for the launch of each driver's sound wave. The cabinets are also heavy. Wilson Audio's much smaller Sasha W/P weighs about the same as the Vivid G1 Giya -- 176 pounds.

The Giya's purpose-built drivers work along with the cabinet. The 1" dome tweeter and 2" dome midrange are both patented, and among their features are radially polarized neodymium magnets that maximize the flux -- the strength of magnetism -- of the voice coil while offering a low stray magnetic field, so they can be situated near display devices without issue. Computer modeling defined the shape of the drivers' dome, which is catenary -- the curve that a hanging chain or cable assumes. This yields first break-up modes that are much higher than for simple spherical domes. The Giya's 6 1/2" midbass driver looks like a typical cone driver, but its dustcap is actually an integral central dome. It uses a perforated former, which provides a pathway for air to escape, but even here there was additional thought about the number and size of the former's holes. Vivid uses anodized aluminum for the diaphragms, as it represents what the company considers the best combination of stiffness and density, even compared to titanium and magnesium.

The Giya's dual 11" woofers allow over two inches of linear movement, something that can cause some distress when you see it happening. Their specially designed basket features a dozen radial struts that not only strengthen the driver's structure but also

allow a maximum amount of airflow for heat dissipation. Most interesting, however is the woofers' placement on the sides of the cabinet. This was necessary because of the cabinet's narrow front. However, it also made for a unique opportunity: using the woofers back to back, physically connected by a tensioning rod so they are decoupled from the cabinet. In this configuration, any movement from one driver is canceled by the other. Indeed, look at all of the Giya's drivers and you'll see no fasteners. Instead, all are held in place with tension by their outer flanges.

Fourth-order Linkwitz-Riley crossover slopes (24dB per octave) are used, but, as Laurence Dickie pointed out, these represent the final acoustic response and take advantage of the natural output characteristics of the drivers, so the networks themselves are of a lower order. The Giya's crossover frequencies are 220Hz, 880Hz and 3.5kHz, and they were arrived at on the basis of driver excursion at the low end and break-up performance at the high end. In other words, the drivers' natural response determined where they would be crossed over.

If it's not obvious by now, let me spell it out: Nothing about the Giya was left to chance or, moreover, whim. I had a long talk with Laurence Dickie at CES, and he had a well-informed opinion on the issue of voicing -- contouring the output of a speaker to suit human preference, most often that of the designer. According to Dickie, voicing has "a decreasing role as the purity and smoothness of the drivers improves." Translation: Get the engineering right and there's little need for tweaking. "The part of the design where we rely most on hearing and listening." Dickie said, "is in deciding the overall balance of the system. With Giya, we adopted a gentle slope between 100Hz and 20kHz, with a fall of about 3dB to give the most comfortable balance with the widest range of recordings and listening environments."

The G1 Giya is a speaker abundant with technological answers to questions about sound reproduction. I've touched only on the highest of the high points. Dickie and the Vivid team would have to produce a thick pamphlet in order to discuss all of the engineering fine points that went into the creation of this speaker.

## Getting started

Philip O'Hanlon, Vivid Audio's US distributor, delivered the Giyas one evening, and he and I immediately set about uncrating and placing them in my room. Each speaker comes in a crate that's truly large enough for burial. Happily, the speakers, while tall, are not as heavy as some others of commensurate size, so pulling them from their crates and muscling them into place wasn't exceptionally difficult. The curl at the top is an effective place to grab when moving the speakers around.

Philip has a very defined setup regimen. He plays special stereo recordings made from multichannel masters to set the speakers' distance from the listening seat and determine proper toe-in. When everything is right, the speakers create a large arcing soundstage with Philip's recordings, and instruments are projected outside each speaker's position, behaving much like surround sound. We also listened to conventional stereo tracks and made a few small adjustments, working at toe-in in order to get the spectral balance just right. While we didn't spike the speakers during setup -- Philip feels that doing so doesn't improve their sound to any great degree -- I did later on. Normally this adds some control to the bass, reducing excess bloom and overhang. However, the spikes produced no discernible effect with the Giyas, Philip positing that the reaction-canceling ports and woofers were responsible for this.

After Philip left, I did move the speakers around some, but for best sound they ended up just where he had initially placed them: 48" from the front wall, 53" to the side walls, and toed-in so the drivers' output crossed slightly behind my listening seat, which was

roughly 10' 8" from the front of the speakers. Because the Giyas are ported out both sides and the speakers' spectral balance doesn't lean toward low-frequency prominence, I suspect they will work in rooms where other floorstanding speakers of their stature would create issues. This is borne out by the fact that Asia, where average living space is more modest than in other parts of the world, is the biggest market for pairs of G1 Giyas right now.

The Giyas are rated as 91dB sensitive, with a minimum impedance of 4 ohms. This would seem to make them suitable for modest amplifier power. However, their large woofers need the high current of a burly solid-state amp to display maximum depth, power and control. In addition to bringing the speakers, Philip O'Hanlon also lugged a pair of Luxman B-1000f mono amps, which are current-producing machines. I reviewed these amps some time ago and was familiar with their sound, so they were a good choice for use during my evaluation of the Giyas. I also tried other amps, including an Audio Research Reference 110 and a pair of Lamm M1.2 Reference monoblocks. More on both below.

Needless to say, owners of the Giyas should allot appropriate funds for the purchase of the best amps possible to use with the speakers -- "best" meaning an amp that will control those woofers and still sound refined. For solid state, many amps will offer the control but fewer the refinement. In terms of tubes, I suspect Audio Research's Reference monoblocks would work well, and I also heard the Giyas -- the exact same pair that was in my listening room -- at CES driven by Convergent Audio Technology JL3 monoblocks, and the sound was wonderful. The CAT monoblocks, with their 56-pound output transformers, are about as stalwart as tube amps get, and they would be my first choice of tube amps for use with the Vivid Giyas -- or any other speakers that need such beefiness.

### **Engineering in service to music?**

**W**hen it comes to musical reproduction, pursuing absolute fidelity is a questionable goal, and it has put more than a few audiophiles on the road to sonic ruin. The recording process is by nature imperfect; no recording that I've yet heard is able to re-create every element of live music, or come close in absolute terms. And even if recording music were a perfected art, the equipment we use for reproduction is far from ideal. Myopic audiophiles often fixate on a frequency-response graph, for instance, to justify aspects of a loudspeaker's worthiness, forgetting (or perhaps purposely overlooking) that this one measurement doesn't encapsulate the totality of a speaker's performance. Frankly, if all you want from your speakers is flat frequency response, it's easy and relatively cheap to attain with a wide array of professional monitors. That few of these speakers sound realistic when reproducing music is perhaps of little consequence, as long as those who listen believe that what they are hearing *has to be* realistic because of that flat frequency response. Mind over matter, in other words.

While I know that measurements can reveal important data about speaker performance and they are especially useful when designing speakers, I never trust them over and above what I hear - and I distrust anyone who does. Accuracy of reproduced music isn't defined by a single speaker measurement or a battery of them; it exists in the authenticity of what emerges from the speakers. This is the

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reality of musical reproduction, and all dogma regarding measurements is fantasy at best and delusion at worst.

I offer all of this editorializing as context for my comments about the G1 Giya's performance. I am fascinated by the engineering required to produce a speaker like the Giya, but only insofar as it leads to convincing musical reproduction. I was familiar with the Giyas from listening sessions at shows and in Philip O'Hanlon's monstrous room, but it was with more than a bit of vigilance that I began listening to them in my room. Would all that keen engineering manifest itself in the Giya's sonic personality, and, if it did, would it prove its worth in musical terms?

Right away there were answers. The Giya was designed to be a wide-bandwidth, low-distortion, low-coloration speaker, and that's exactly how it sounds. There was a fundamental evenhandedness to its presentation that let me hear the character of the ancillary equipment and recordings with ease. The treble displayed breadth and air, while the bass was positively sledgehammer-like in its depth while conveying state-of-the-art nimbleness and retrieval of detail. The midrange was like water, neither additive nor subtractive. There was nothing warm nor cool, lean nor full about the Giya. Neutrality ruled its sonic presentation.

However, unlike some speakers that aim for neutrality, the Giyas were not unforgiving in their top-to-bottom balance, a condition that made them truly able to accommodate any music. While it's not possible to hear that 3dB downward tilt that Laurence Dickie mentioned, it is possible to discern its overall effect with a wide range of music, and especially different versions of the same album. Elvis Costello's catalog has been remastered more often than that of any other musician, and I own every digital version of *My Aim is True* and *This Year's Model*. I sometimes vacillate over which ones sound best among them, but the Rhino double-CD editions [Rhino R2 74285 and R278354] most often come out on top. All of the versions sound rather thin and disembodied, including the run-of-the-mill Columbia LP of *This Year's Model* [Columbia PC735331]. However, Mobile Fidelity's new LP of *My Aim is True* [Mobile Fidelity MFSL-1 329] is a different story, balancing the sonic spectrum through the discovery of a nearly missing bottom end, which brings some much-needed density to the music.

The Giyas laid bare the large and small differences among these recordings, but they never made the CDs sound unlistenable due to a hot treble or excess upper-midrange energy -- the trouble region for digital playback. The sound was immediate and revealing without tipping over into brutal honesty -- a very deft balance to be sure. My advice for Elvis Costello's early recordings? Buy the MoFi LP (*This Year's Model* and *Armed Forces* are in the works) for the sound and the various CDs (all of them) for the extra tracks. There are some great outtakes that are definitely worth owning.

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With very good or great recordings, the Giyas positively stunned with their speed and dexterity. Their transient fidelity -- the way in which they tracked a drum strike or horn blat from beginning to end -- was supreme, each minute element of a musical event uncovered and kept in proper proportion. The Giyas exercised true *musical* insight. My sense was that this occurred because the purpose-built drivers successfully aggregated into a sonic whole, which is exactly how some well-known large multidriver speakers fail. There was always the sense of uniformity with the Giyas. Dynamics scaled realistically, and the speakers' immense bandwidth was smoothly rendered, without emphasis or suck out. John Coltrane's great solo on the title number from the recently

released *Crescent* double-LP set [Impulse!/Original Recordings Group ORG 018] was amazingly animated and buoyant over the Giyas. If you know Coltrane's playing, you know how brashly muscular it can be. When the sound is immediate, as it is with this version of *Crescent*, Coltrane becomes a system workout all by himself. The Giyas never cut any corners, propelling his playing into the room with full force, even as he dipped and climbed. "Those drivers -- wow," my listening notes simply said to illustrate this point.

I also used *Crescent* one afternoon to evaluate amps with the Giyas, and what stood out when I listened with the enormously powerful Luxman B-1000f monoblocks was how they accentuated the speakers' transient abilities and especially their revelatory bass, and how the speakers could take all of the pounding the amps could dish out. Down low, the Giyas were like elite athletes, unearthing dynamic gradations and pitch with complete musical relevancy, revealing a nearly impossible amount of detail, even as they reached their very depths. They went extremely low -- into felt-but-not-heard territory. Beck's *Sea Change* on Mobile Fidelity LP [Geffen/Mobile Fidelity MFSL 2-308] was a consummate test. Its layered production extends down into the bass region, where synth washes mix with bass lines to produce a warm low-end brew that's as soothing as hot chocolate. The Giyas unraveled it in effortless fashion, and when called on for some fireworks, as with the bass-drum whacks on Louis Lane and the Atlanta Symphony Orchestra's version of "Fanfare for the Common Man" from the Telarc SACD [Telarc SACD60648], they drove pressure waves into my thorax. This cut also has some of the most amazing tam-tam strikes ever recorded -- they seem to swirl around the room -- and the Giyas conveyed their unique energy with just the right amount of air and steely bite. While no one's musical diet should be dominated by such sonic spectacles, it's exciting to hear them in their full glory, and the Giyas obliged every time.

Back to the amps. Easily the most authoritative of them in the low frequencies were the Luxman monoblocks, with the Lamm M1.2s placing second. The Lamm monoblocks had greater midbass heft than the Luxman amps, but they ceded some dynamic and agility and ultimate depth. The Audio Research stereo Reference 110 didn't go as low as either of the monoblocks, rounding off and softening drum whacks in comparison, but it was still able to drive the Giyas reasonably well and sounded mostly as it had with other speakers.

Through this switching and swapping, it became clear to me what distributor Philip O'Hanlon values in the Vivid speakers and Luxman electronics he carries, especially when they are used together: tonal neutrality, imaging vividness, transient detail and speed, and deep-bass impact. You get all of this in abundance with the Giyas, and maximize it with the Luxman amps.

### **A pair of aces**

**I**f you've paid any attention to the price of statement-level speakers nowadays, you've undoubtedly noticed the continuation of a trend that began a few years ago. Never mind prices that just clear six figures, a quarter of a million dollars has become the new plateau. So it is especially noteworthy, I think, that the Vivid Giya costs just shy of \$60,000 per pair. Spending such money on loudspeakers is a casual act only to the über rich, but when you consider speakers of similar stature and performance, \$60,000 is downright economical.

There is another speaker in this general price range that buyers should consider: the Wilson Audio MAXX 3 (\$68,000/pair), which has been my reference since its introduction in late 2008. Like the G1 Giya, the MAXX 3 is a five-driver, four-way speaker that's around five feet tall, and both represent unique visual statements that are different enough to please, or appease, many people. However, the MAXX 3 makes use of

proprietary materials throughout its hefty cabinet, which comes in four distinct pieces, allowing for fine adjustment of the driver modules to suit different rooms and listening positions. Its drivers are specially designed and manufactured to Wilson Audio's specifications, and some are modified at the Wilson factory as well.

The Giya makes itself known via its overall neutrality, wide bandwidth, transient speed and exceptionally powerful, expressive bass. The MAXX 3's defining characteristic is its coherence -- the ability of the drivers to create a seamless sonic picture. I praised the Giya for this as well, but the MAXX 3 achieves it in a different way, one that blends in subtle touches of natural color that seem wholly appropriate and realistic to my ears. This gives the MAXX 3 a sweeter, fuller character compared to the lighter Giya.

The midrange is a definitive strength of the MAXX 3. It's highly articulate and revealing, having an especially deep well of musical detail and tonal color from which to draw. The Giya is more straightforward through its midband, eschewing any sort of overt character in favor of utter tonal and timbral evenhandedness. This makes for images of singers in particular that are unadulterated and lithe, but slightly less rounded than those of the MAXX 3. As with the Giya's sound everywhere else, there is great articulation of vocal texture, which makes nuances seem more elemental. The MAXX 3 achieves this as well, and, again, the images it portrays are somewhat more corporeal.

The Giya's bass is less prominent than the MAXX 3's -- more agile and effortless too. Low-end resolution -- revealing texture and dynamic gradations as well as defining pitch -- is unmatched with the Giya. The MAXX 3 can attain low-end weight that the Giya can't quite equal, and this never sounds additive, even though by the Giya's standards it certainly would be. Bass depth is about equal for both speakers, although there were times when it felt like the Giya reached a few Hertz lower.

Obviously, the sonic presentations of these two speakers are rather different. Preference being what it is, it should be easy for listeners to choose a favorite. I own and prize the MAXX 3s, but I have to admit that the Giya's sonic strengths are undeniably impressive, as is its musical soul.

### **In the end**

I began this review by talking about the highly original way the Vivid G1 Giya looks and segued into a discussion of the speaker's profuse technology. But it is the Giya's sound that steals the show, conveying music with obvious neutrality, an unadorned midrange, quick transients, and deep, powerful low frequencies. Yet, while it's easy to hear all of these things, the Giya didn't reduce the music to them. It brought its considerable strengths together into a sonic portrayal that never descended into the clinical parsing of the music. Even with a very worthy competitor in my house at the same time, I spent a number of memorable weeks with the Giya, listening to music both new and old, often hearing it in new and more distinct ways.

The G1 Giya will tax the rest of an audio system, however, not just in terms of its requirements from partnering amps but also in the quality of all upstream ancillaries. It will not forgive sonic missteps, and it won't intensify them either. Its neutrality isn't a euphemism for ruthlessness, although poor electronics may tilt things that way.

If I have one wish for the G1 Giya, it is for more people to hear it in ideal circumstances, especially in light of the proliferation of speakers that cost far more and give far less in return. There is a great deal to respect about its design, and even more to admire about its sound.