

 **Headphones/Headphone Accessories**

AKG Acoustics K 701 headphones

By Wes Phillips • August, 2006

Oh mama, was I ever excited when I heard rumors of the existence of AKG's K 701! If you're among the audiophiles who sneer at those of us who *like* headphones, you're probably rolling your eyes and thinking I must lack a rich inner life.

But hold on there, Skippy—some of us *use* those cans in our prosumer studios, in recording sessions, and even in barn-burning late-night critical listening sessions where we employ ancillary equipment that would beggar your jaded high-end sensibilities. We're not talking about the three-buck, upchuck disposable 'phones your friendly flight attendant flogs before your in-flight main feature. We're talking about serious tools that can reveal a flea fart in a cathedral.

Well, some of us are. Me, I'm just a headphone geek, so news that AKG was going to launch a flagship dynamic headphone had me all aquiver with anticipation. After all, the company's last major assault on the state of the headphone art was the K 1000, which AKG called an "earspeaker," mostly because they resembled speakers in many ways—they sat off to the front of the ears and beamed music back into the pinnae, rather than pumping it more or less straight into the ear canal, as most phones do. They were also brutes to drive. John Marks was a big fan, and John's got great taste in gear—but I admired the K 1000s more than I loved 'em, mostly because I found them incredibly fiddly. I was never convinced that I'd angled both earspeakers equally, so I was always trying to get them in better balance. As Bob Reina once opined about electrostatic speakers: great for a desert-island system, where you'd be desperate for something to do, but for regular listening, not so much. Besides, the K 1000s cost nearly a grand by the time AKG discontinued them last year.



Rumor had it that the K 701s would come in closer to \$400, which they did—\$450 and frequently discounted. And by the time Head-Fi had its regional NY Meet in November 2005, word had gone around the Internet that the K 701s would be there, which they were—just barely. AKG's US distributor had sent out two pairs prior to the meet, one to HeadRoom's Tyll Hertsens and another to a hard-core headphoner. Neither pair had logged more than a few hours of music-playing, and while they sounded intriguing, they had a hardness that didn't make me ready to trade in my reference Sennheiser HD-650s. But they were extremely comfortable, and their wire frames, leather headband, and white porcelain-like rims and motor housing made a dashing retro-futuristic fashion statement. They were also quiet—not a shred of hiss or hum.

Two days later, I got an e-mail from Hertsens: "I've now logged over 100 hours of music playing on the 701s and I have a new reference. You didn't hear half of what they could do." You better believe that the five months I waited to receive a review sample seemed like a *long* time. Why so long? AKG had a hit on its hands. They couldn't make 'em fast enough to cover demand.

Time after time you refuse to even listen

If you haven't been paying attention to high-end headphones, \$450 probably sounds like a lot of dough—and it is. You could be forgiven for thinking, *What are those things made of, gold?* Actually, nothing in the K 701s is all that rare, unless you count as rare the kind of engineering that sweats all the small details.

Take the cabling, for example. AKG's German-to-English translation machine calls it "true bi-wiring" in some publications and "balanced" in others. What they mean by that is that the 701s use separate grounds for each motor assembly rather than a common ground (although the ¼" jack *does* feature a common ground, of course). That's probably one reason I was struck by how silent the 701s were the first time I heard them—and all the times after that.

AKG uses 99.99% pure OFC, which may not be "six nines" (99.9999% pure) copper, but it isn't what most headphones use, either. The voice-coils use flat wire, which is common enough in high-end loudspeakers and microphones, but again is less than common in cans. Flat-wire windings are said to better concentrate the magnetic field within the voice-coil, thus exerting superior control over the diaphragm's movement.

The 701s also boast AKG's Varimotion transducer. The diaphragm is contoured to be thicker at the center than at the periphery. The stiffer center acts as the tweeter, while the more pliant boundaries produce the low frequencies. AKG cuts runnels into the stiffer portion in order to tweak the diaphragm's mechanical impedance—or, as AKG puts it, "the diaphragm has been optimized to prevent unwanted vibration modes." The point is to keep the center of the diaphragm acting as pistonically as possible and thus keep the voice-coil centered in the magnetic field. This, AKG says, "results in lower harmonic distortion, extended bass response, and higher maximum loudness."

As I mentioned earlier, the 701s are *extremely* comfortable. Their huge, ear-enveloping foam pads, clad in some kind of velveteen, sat on my head for hours without seeming warm or tight. AKG says it uses "3-D foam," which I take to mean foams of different densities. They also claim the shape of the earpads allows the drivers to be aimed at the ears "at the proper angle." I can't prove that they were, but the sonic results were

hard to argue with. The leather hammock-style sling that runs under the springy-wire connecting rails to cradle the listener's head also contributes to the luxe fit. Any way you slice it, the 701s coddle your head and ears.

Because the K 701 is aimed not at the iPod generation but at AKG's studio market, the phones are terminated with a ¼" jack plug. Still, a substantial machined-metal ¼"-to-1/8" converter is included in case you need to use 'em with a source equipped only with a mini jack (my HeadRoom Micro headphone amp, for instance). AKG also includes a "docking cradle"—essentially a pedestal with a foam cutout that lets you perch the 701s atop your recording console or desktop. At first I thought this the dumbest gimme I'd ever seen, but I ended up using it a lot. Actually having a place to put something makes it more likely that I'll find it again in the chaos that is my office. Oh, who am I kidding—in the chaos that is my *life*.

Is there anybody going to listen to my story?

Despite the shiny whiteness of its ear cups, the K 701 isn't really intended to connect to the ubiquitous iPod. There's that ¼" connector issue, of course, and the headsets are large, even if they are light, and aren't really easy to balance on the noggin while jogging or biking. Even if you're going to use 'em in a sedentary position, such as reclined in your commodious airplane seat, the leakage from their open backs would make you poor company.

So where would you use the K 701s? Monitoring recording sessions, obviously, as well as any place you need high-quality listening tools, which in *my* house means anywhere I have a headphone amp set up: office, living room, and laundry room (strange, I know, but my wife is devious about finding ways to get me to do chores).

Why use a headphone amp? Well, the K 701s aren't exceedingly hard to drive, but the flea wattage of the average portable (or even the ¼" jack present on most separates) tends to accentuate that initial edginess I alluded to in my first experience with the 701s in much the way listening to a pair of speakers near an amplifier's maximum output accentuates the amp's inadequacies. The 701s aren't unique in this regard; most ambitious headphone designs benefit tremendously from a well-designed headphone amp. Fortunately, I had a ton of such amps around the house: several generations of HeadRoom, Channel Island Audio's VHP-1, and Ray Samuels Audio's SR-71 and Hornet. All of them let the K 701s' tonal balance and authority blossom.

Say the word I'm thinking of

When I first received the AKG K 701s, I listened to them briefly to confirm my initial impression of an aggressive assertiveness I wouldn't cotton to. Forewarned by Tyll Hertsens' assertion that they needed to be run in, I set them up in an unused room, connected to a Channel Islands Audio VHP-1 and Musical Fidelity X-Ray^{V3} CD player set to repeat. I didn't listen to them again for a few hundred hours, so no, *I* wasn't being broken in—they were.

About a week later, I checked in on the K 701s and that edginess was gone, replaced by balanced sound with a natural top-end sparkle and a ridiculously robust bottom end. What causes such a change? Some folks speculate that the diaphragm becomes more supple with play, or that the motor mechanism wears in. I don't pretend to know what goes on, only that a few hundred hours of vigorous play transformed the K 701s.

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I'd been given a copy of Geoff Emerick's *Here, There and Everywhere: My Life Recording the Music of the Beatles*, so it seemed only natural to pull out copies of the Beatles recordings I was reading about, starting with *Revolver* (CD, Capitol 025764), the first album on which Emerick sat in the balance engineer's chair. *Whoa!* I came to about 40 minutes later, when the book fell off my lap. The 701s are not a good choice for listening and reading—music sounds too good to be relegated to the background.

The things I do for this magazine.

I'd intended to follow the text and home in on some of the flubs and mistakes Emerick enumerates in his saga, but that dog just plain wouldn't hunt. Oh, I heard 'em, but I was more captivated by the musical gestalt than by the details. McCartney's deliciously fat bass sound on "Here, There and Everywhere" just burbled along too delightfully for me to care about catching the lads out on any mistakes. And while I appreciated knowing that it was *McCartney* playing the guitar solo on "Taxman," I can't say I enjoyed the song any more for learning that.

It was the same story when I moved the K 701s into my home office and tried to get some work done while listening to some "background" music. With the 701s, there was no background music. Music was alive, compelling, *demanding*.

Is that too abstract? Should I break down the sound into bass, midrange, and high frequencies? Okay, the K 701s possessed some of the deepest bass I've ever heard from a pair of headphones. The bass was scary good, although it lacked some of the physical impact that speaker listening can convey on, say, a live jazz recording such as Bill Evans' *Sunday at the Vanguard* (CD, Riverside 9376), where you not only *hear* Paul Motian's kickdrum flex the Vanguard's wooden floor, you feel it in your gut as well. On the AKGs, I heard it, but not in my gut.

Midrange? *Oy!* Such a midrange they have! On "Willy O'Winsbury," from Pentangle's *Solomon's Seal* (CD, Castle 555), the AKGs captured perfectly the slight catch in Jacqui McShee's voice as she delivers the king's line "If I were a woman as I am a man." I must have swooned over this song hundreds of times over the years, but I've almost never heard it as fully

embodied as through the K 701s. They can teach old songs new tricks.

As for the K 701s' HF performance, I found myself listening to an enormous amount of acoustic string music for the very simple reason that the AKGs delivered the snap, bloom, and harmonic overtones of plucked strings with unbelievable clarity. David Russell's latest CD, *Renaissance Favorites* (Telarc CD-70659), spent a lot of time in the sundry listening stations around the house. Francesco Canova da Milano's *Fantasia XIII*, with its flurry of staccato runs and long tolling tones, was a particular favorite, especially for the way the decay of the notes sketched out the acoustic in which the piece was performed.

Of course, just 'cause I dug da Milano didn't mean I couldn't hear how great Bill Monroe's classic Decca sides were as well. Even though those recordings are almost half a century old, they still sound crisp and clear in *Bluegrass: 1950-58* (4 CDs, Bear Family 15423). Although I'd listened to the Bear Family discs many times before auditioning the K 701s, I must have been listening with blinkers on (earplugs in?)—it had never penetrated my thick skull that Monroe didn't tune his mandolin the way other mortals did. Listening to "Sally Jo," I heard string sonorities that didn't match the classic octave pairings most players use, so I turned my office right-side up (it usually *is* upside down) looking for the CD booklet, which, sure enough, explained that "It was while at Decca that [Monroe] introduced and recorded his original and trademark mandolin tuning—where instead of four pairs of strings tuned to the same pitches as a violin, he tuned several pairs of strings to two different notes that added the otherworldly timbres to his 'high lonesome' sound."

Yeah, I'm probably an idiot not to have ever noticed that before, but *dang*, it had never been so baldly in my face—er, ears—before.

I thought I knew you. What did I know?

Over the last decade, my go-to headphones have been the [Sennheiser HD-600s](#) and the [Sennheiser HD-650s](#). In my review of the HD-650s, I said, "When I listened to the Fab Four, for example, all I could hear were the punch-ins (the mid-strum appearance of a distorted guitar five seconds into 'Money'), dropouts (the lead guitar disappears from the right channel almost two minutes into 'Lucy in the Sky with Diamonds'), and jokes ('Ahhhh, Paul,' sings John under Paul's lead 20 seconds into 'Lovely Rita')."

This actually proves two things: 1) I apparently don't have many original ideas, and 2) while I could hear all that stuff with the AKG 701s, it didn't really seem like that big a deal. Maybe I just don't like playing "gotcha!" as much as I used to, but I think it has more to do with my chief niggle regarding the HD-650s, which was that they could be, shall we say, overly analytical—that I could all too easily focus on the musical trees (or even branches) rather than the forest.

Comparing the AKG K 701s to the Sennheiser HD-650s with, oh, let's take David Russell's da Milano track (any of the others would do just as well), it was easy to hear why that was. Russell's guitar sounded rounder and warmer through the Sennheisers. *Too* warm and round, in fact. The AKGs matched the HD-650s for a full bottom end and pleasing tonality through the midrange, but the 701s had sparkle and life in the high frequencies and harmonics that the '650s simply didn't match.

Mind you, one of the glories of the HD-600s and HD-650s—to my ears, at least—had always been how unetched and natural their top ends

sounded. Contrasted with cheap headphones, or even fairly pricey headphones with a reputation for "exciting" sound, what I love about the Sennheiser sound was the evidence that the designers had apparently taken an oath to first do no harm. However, with track after track, it became apparent to me that with the K 701s, AKG has developed headphones that not only did no harm to the top end, but also told the truth about what was going on up there.

The AKG K 701s have raised the bar for natural-sounding headphones.

I want you, I want you, I want you

Throughout the High End, the level of the good has gotten so *darn* good that honesty usually compels me to waffle a bit in the conclusion of a review. You pay a hefty price to go from pretty good to *a wop bop a loobop a lop bam boom!* As a result, we reviewers have to qualify everything. At \$450, AKG's K 701 isn't cheap, although it's far from the most expensive set of headphones available. It's not for you if you want to jog or commute with your iPod. You should use it with a headphone amp. And it's even possible that neutrality *isn't* what you want from a headphone—after all, you're the boss of you.

Still: the AKG K 701s are the best-sounding headphones I've heard—and not for the money, and not for picking apart a recording or playing *gotcha!* with recording engineers. The K 701s just flat-out sound more like music as I hear it than any other headphones I've ever heard. I love 'em and I won't be sending 'em back. They're mine, all mine! *Bwah hah haha haaa!*

Go buy your own.

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Sidebar 1: Specifications

Description: Open-back, circumaural, dynamic headphones with neodymium magnet system. Frequency range: 10Hz–39.8kHz. Impedance at 1kHz: 62 ohms. Sensitivity: 105dB/V. Maximum input power: 200mW. Acoustic seal: open. Ear coupler: full size. Driver: dynamic. Coupler: large. Cable: 99.99% OFC, "balanced" (separate ground for each channel). Cord: 10', straight, left side. Connector: ¼".
Weight: 8.3oz (235gm), not including cable.

Serial Number Of Unit Reviewed: 1935.

Price: \$450. Approximate number of dealers: 1100.

Manufacturer: AKG Acoustics GmbH, Lemböckgasse 21-25, A-1230 Vienna, Austria. Tel: (43) 1-86654-0. Fax: (43) 1-86654-8800. Web: www.akg.com. US distributor: AKG Acoustics US, 914 Airpark Center Drive, Nashville, TN 37217. Tel: (614) 620-3800. Fax: (615) 620-3875. Web: www.akg.com/usa.

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Sidebar 2: Associated Equipment

Digital Sources: [Ayre C5-xe](#) universal player; [Musical Fidelity X-Ray^{V3}](#), [Quad CDP-2](#) CD players.

Headphone Amplifiers: [HeadRoom Micro DeskTop & DeskTop Max](#), [Channel Islands VHP-1](#), [Ray Samuels Audio SR-71](#) & [Hornet](#), [Musical Fidelity X-Cans^{V3}](#).

Preamplifier: [Conrad-Johnson CT5](#).

Cables: [Interconnect: Audience Au24](#), [Shunyata Research Aries](#), [Stereovox Colibri](#).

Accessories: [Furutech TP-80](#) and [Audience adeptResponse](#) power conditioners, [Shunyata Research Hydra](#) power-distribution system; [OSAR Selway/Magruder](#) equipment racks; [Ayre Myrtle Wood Blocks](#).—**Wes Phillips**

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Sidebar 3: Measurements

It is difficult to make a meaningful measurement of a headphone's frequency response, not least because a flat response is not actually what is required. However, I did measure how the K 701's impedance changes with frequency (fig.1), as that gives an indication of how hard the headphones will be for the amplifier to drive. The AKG's impedance ranges between 60 and 65 ohms across most of the audioband, with a low electrical phase angle. The angle starts to increase above the low treble, but so does the impedance, due to the voice-coil inductance. This increase will therefore be benign. The AKG will be a little harder to drive than, say, the 200 ohms of a typical Sennheiser design, but easier than the 30 ohms of a Grado. There should be no problems with good headphone amplifiers.—**John Atkinson**

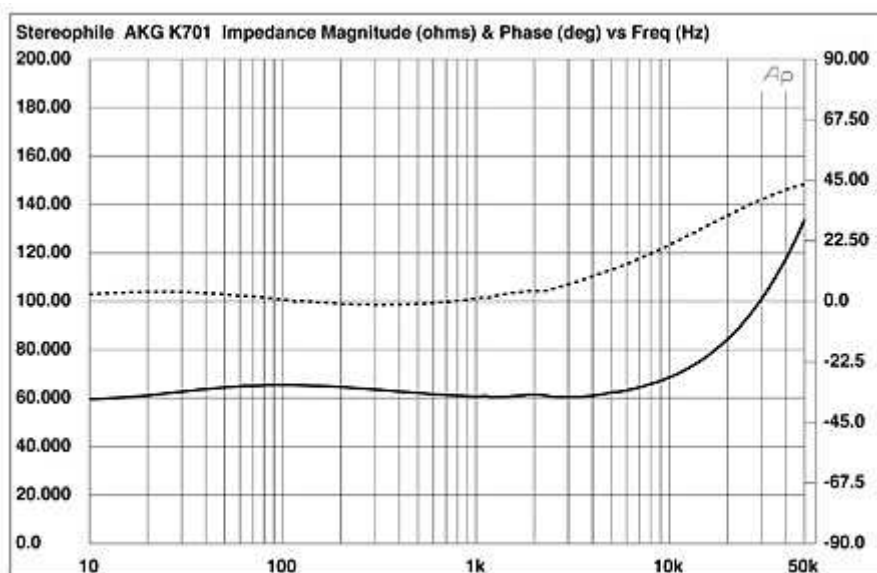


Fig.1 AKG K 701, electrical impedance (solid) and phase (dashed). (2 ohms/vertical div.)

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