Product Review

EarMax Pro Tube Headphone Amplifier

Reviewed by Charles Hansen

Audio Advancements LLC, PO Box 2090, Branchville, NJ 07826, 973-875-8705, www.audioadvancements.com, e-mail audadv@earthlink.net, $750 U.S. Dimensions (EarMax): 3.75″ W × 3.5″ D × 4″ H (top of tube protectors); 15 oz (Power Supply): 2.13″ W × 3.5″ D × 2.25″ H; 15 oz (ABS), 10 oz (wood). Limited two-year warranty (tubes one year).

The EarMax Pro is a single-ended tube headphone amplifier rated for 150mWpc (per channel) into headphones with impedances from 35Ω to 1k. I used Grado SR-125 headphones (32Ω) to check for proper operation of the EarMax Pro. The standard EarMax ($575 U.S.) is rated for less output power (100mWpc), and requires headphones of 200Ω to 2k.

The standard unit is made of cast ABS plastic. A custom model with a handcrafted, solid wood enclosure is also available. Optional accessories include a PakMax 12V DC rechargeable battery, DC-AC converter, cable, battery charger, and an optional carrying case for headphones, CDs, and CD player.

CONSTRUCTION

The EarMax is shipped in a custom two-compartment styrofoam block. Audio Advancements claims that the EarMax is the world's smallest vacuum headphone amplifier, and I see no reason to doubt it. There is a lot of circuitry packed into this tiny package. *Photo 1* shows the power-supply block (left) and the amplifier unit (right).

The power supply uses a three-pin cable with a Lemo connector that plugs into a mating jack at the rear of the amplifier. A rocker power switch and blue LED are located on the power supply. The brass volume control knob is located on the top of the amplifier, just forward of the three tubes. Gold-plated Tiffany-style RCA input jacks and a gold-plated ¼″ headphone jack are located on the sides. A brass guard formed into three loops protects the tubes from damage.

Photo 2 shows the amplifier with the aluminum bottom cover removed. All the circuitry is mounted on one double-sided epoxy PC board with solder mask. The only discrete wiring is from the input and power jacks to the circuit board.

Workmanship is first-rate. Wima film capacitors (some 5%) and Philips electrolytics are evident. The resistors are all 1% metal-film types, and the volume control is a dual 100k Alps Black Beauty. The tubes supplied with the EarMax were one ECC81 (12AT7) and two unmarked ECC88s (6DJ8).

TUBE-POLOGY

A schematic diagram was not supplied with the unit, but its layout is pretty straightforward. The EarMax circuitry is OTL (output transformerless) Class-A with low enough output impedance to drive the headphones.

The selected input signal is applied to the Alps audio pot. The wiper for each channel is connected to the grid of half the 12AT7/ECC81 dual triode. The plate of the first stage is coupled to the grid of a 6DJ8/ECC88 dual triode connected in shunt regulated push-pull (SRPP). The audio output signal is coupled to the output jack through a large electrolytic capacitor loaded with an output resistor. (The standard EarMax uses a lower-powered 6GM8/ECC86 output tube.)

The three tube heaters are connected in series across the 19V AC power-supply input, with the ECC81 filaments paralleled for 6.3V AC operation. This AC

PHOTO 1: Power supply and amplifier.

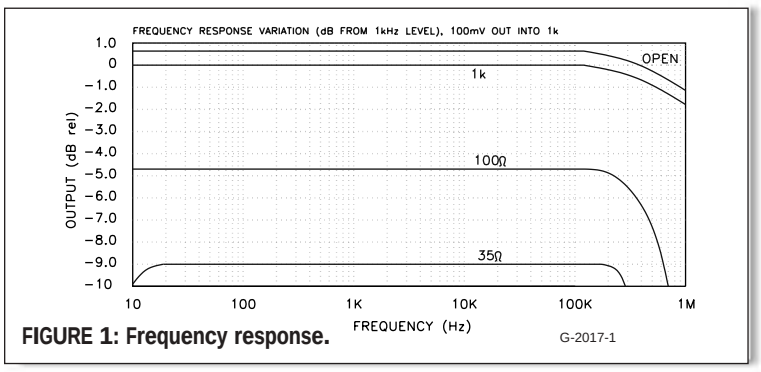

FIGURE 1: Frequency response.

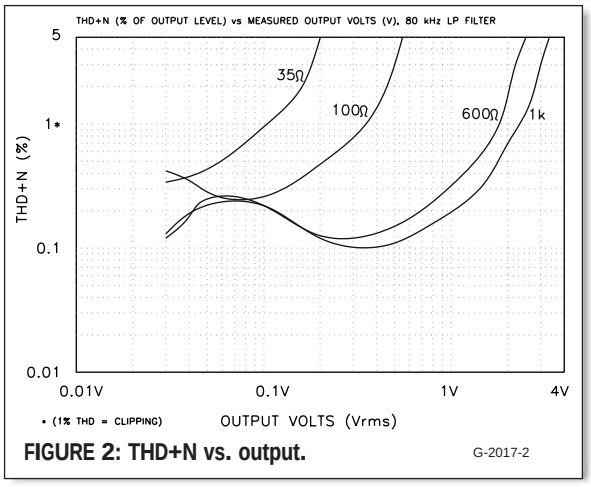

FIGURE 2: THD+N vs. output.

supply is voltage-doubled with diodes and large reservoir capacitors. The main reservoir caps are rated for 40V DC, so the tubes are running at fairly low B+ voltage, probably about +55V DC, since a voltage-doubler circuit produces a DC voltage of approximately twice the peak AC input.

MEASUREMENTS

I operated both channels of the EarMax Pro with pink noise at 150mV RMS into 35Ω (0.64mW) for one hour. The unit runs very cool. The input impedance measured 92k regardless of the volume control setting. The output impedances for both channels measured a low 85Ω at 1kHz (most mid-fi receivers use a resistor of 150Ω to 1k in series with the power amplifier output to provide the signal to the headphone jack). The EarMax preserves normal polarity.

The EarMax showed unity gain into 35Ω when the volume control was set at approximately 4 o'clock, and a 1k load reduced the unity gain setting to 1 o'clock. There was neither hum nor hiss in the headphones, regardless of the volume control setting, and it was absolutely quiet during power-up and shutdown.

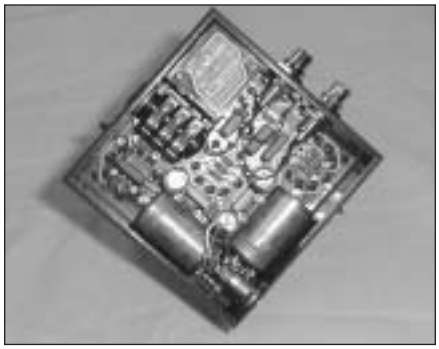

PHOTO 2: Interior view.

TABLE 1
CHANNEL SEPARATION

FREQUENCY (HZ)	R-L	L-R (DB)
100	–62	–58
1,000	–61	–57
10,000	–51	–43
20,000	–46	–37

I recorded the frequency response for loads of 35Ω, 100Ω, 1kΩ, and an open circuit (*Fig. 1*). The output coupling cap rolls the low frequency off –3dB at f=1/(2πRC). The high end of the EarMax frequency response is specified to be 1MHz. In order to measure that lofty level, I needed to pull out two pieces of high-frequency equipment I don't use very often: an HP-204C oscillator and an HP-200D VTVM. High-frequency response rolled off gradually above 120kHz, with no additional HF gain peaking.

The EarMax provides a maximum gain of only 4.3dB with a 35Ω load. Full-volume gain increased to 14.2dB with 1k. Volume control tracking was excellent, with no measurable difference for output voltages from 30mV to 2.5V RMS into a 1k load. Channel separation (crosstalk) was a bit better from right to left (*Table 1*).

The EarMax's square-wave response was very good. The 1kHz response was just about perfect. The 40Hz square wave showed some tilt, which increased as the load decreased, as a result of the low-frequency response rolloff caused by the output coupling capacitor. The 10kHz response showed a very slight leading edge rounding with a 35Ω load, and one small damped cycle of peaking with a 1k load.

As with most tube gear, the EarMax never really goes into hard "brick wall" clipping. The positive peaks of the waveform are the first to be com-

TABLE 2
MEASURED PERFORMANCE

PARAMETER	MANUFACTURER'S RATING	MEASURED RESULTS
Bandwidth	4Hz–1MHz, ±3dB	6Hz–530kHz; +0/–3dB 35Ω 2Hz–1.1MHz; +0/–3dB 1kΩ
Power output	150mWpc	0.32mW, 35Ω, 1% THD+N 1.2mW, 100Ω, 1% THD+N 6.3mW, 600Ω, 1% THD+N 7.1mW, 1kΩ, 1% THD+N
Load impedance	35Ω to 1kΩ	
Output impedance	N/A	85Ω at 1kHz
Distortion THD+N	N/A	See *Fig. 2*
CCIF intermodulation	N/A	0.32% 35Ω, 0.283Vpp 0.14% 1kΩ, 0.283Vpp
Channel separation, 1kH	N/A	See *Table 1*
Hum/noise, input shorted	N/A	0.3mV RMS

PRODUCT REVIEW
AUDIO ADVANCEMENTS' EARMAX PRO HEADPHONE AMPLIFIER

LISTENING SETUP

I used the EarMax Pro in my listening room on a dedicated AC line and earth ground, fed by my home-built isolation transformer power conditioner and an AudioPrism Foundation III. The source was a Rotel RDD-980 CD transport paired with the Assemblage DAC-3 D/A processor. Headphones included the Sony MDR-CD999, Grado SR-80, and Grado SR-225. On hand for comparison were the Parasound ZAMP (used as a headphone amp), NAD 1300 preamplifier, and the Amphony Model 1000 digital wireless headphones.

Digital interconnect was Sound & Vision Digiflex Plus BNC; analog was either Kimber Silver Streak or Kimber PBJ. All components inhabited a RoomTune JustaRack, with the RDD-980 on three small AudioPrism Isobearings.

To ensure break-in, I let the EarMax play at fairly loud volume for over 50 hours before listening. A half-hour warmup every listening session brought the tubes to a good operating state.

REVIEWED BY MUSE KASTANOVICH

For frequency balance, any combination of headphone-amp will actually depend more on the headphones than the amp, although different amps, of course, have their own subjective colorations as well. First I tried my ten-year-old Sony MDR-CD999 headphones with the EarMax Pro (hereafter referred to as EarMax), with good results. On the *Buena Vista Social Club* CD (World Circuit/Nonesuch 79478-2), the Sony had a mellow sound that gave voices and drums a nice genuine feel, but guitars and rasp were a little too soft. This particular combination had a wonderful presence and lively dynamics that kept the music very involving.

Over the long term, however, the MDR-CD999 sounded just a bit too rolled off in the treble with the EarMax. Using the Silver Streak interconnects helped a bit in the top octave, but the frequency balance was still not quite right. In Sony's defense, I tried them briefly with the other amps, and the frequencies were a bit more balanced, but I ruled them out as the best match for the EarMax. Talk about extra volume headroom, these Sony headphones are so sensitive that I could not turn up the volume more than one quarter from zero on the EarMax.

Next up were the Grado SR80 headphones. Like the Sony unit, these have a screw-on ¼″ phone plug adapter, the native connector being a miniature ⅛″ stereo plug. I assume this is to make them easier to use with portable devices, but it's not the best thing for the signal to pass through one more mechanical/electrical contact.

The sound with these Grados was stunningly good, almost a match made in heaven. For example, on the recently remastered *Kind Of Blue* CD (Columbia/Legacy CK64935), I could feel the size of the bass' soundboard, see the shimmer flying off the cymbals, and catch every nuance of Miles Davis' musings. Nothing seemed blown out of proportion, and nothing was so small that it disappeared into the mix either. I used the Kimber PBJ interconnects.

With the Silver Streak, the top octave was a touch too hot. I recommend sticking with copper interconnects for this combination.

Lastly, I plugged in the Grado SR225 headphones, which sell for around $200, approximately twice the price of the SR-80s, and about what the MDR-CD999s originally sold for. These have a far more detailed and refined sound than the MDR-CD999s, however. They sound fairly similar to the SR-80s, but with a touch more detail and a smoother, more subdued, bass region.

ABOUT THE AUTHOR

Muse Kastanovich received a bachelor's in physics from Oberlin College. He was a contributing editor with *Stereophile* magazine for three years. He has enjoyed modifying all sorts of audio equipment. He has built two different versions of the Pass Zen amplifier and the Bride of Zen preamp. He is currently employed as a computer tech with a small shop in Albuquerque, N. Mex.

The SR-225s are also a bit more dynamic and articulate. They spacially separate the different instruments more, and are probably the best-performing headphones I've ever heard in that department. Both pairs of Grados share an uncanny (no pun intended) ability to place instruments not just inside your head, but arranged just outside it as well, and this pleasing quality was greatly facilitated by the EarMax. Instruments were usefully separated in space, not as much as with well-placed loudspeakers, but enough to help me notice every single musical line in a composition.

So for the rest of the review I used the most flattering headphones for the EarMax—both pairs of Grados. You might argue that this is not fair in the comparisons that follow, because the frequency balance with the MDR-CD999 was actually better with some of the other amps. But there is much more to judging quality than just frequency response, and the Grados were superior in most other areas of presentation, regardless of amp.

Not surprisingly, Audio Advancements' literature on the EarMax Pro states that they were designed to drive low impedance headphones such as the 32Ω Grados. From a listening standpoint, they seem to have succeeded in that goal.

DIFFERENT AMPLIFIER COMPARISONS

First, I compared the EarMax to the interesting Amphony model 1000 digital headphones with their own built-in headphone amp. At $129 retail, the whole thing sells for about one-seventh the price of the EarMax/Grado combination! I did not expect such an economical choice to really compete with the EarMax sonically, and on the finer points of performance it did not. However, these wireless phones designed in Germany sounded quite a bit better than I had expected for the price.

The Amphony had dynamics that were nearly the equal of the EarMax, and had quite a pleasing, fairly accurate frequency balance. In other areas, such as transparency, spaciousness, pace and rhythm, and timbre, the EarMax was preferable though. The EarMax had a smoothness and a naturalness to it that went a long way towards helping propagate the illusion I was listening to something real. The Amphony had more of these pleasing qualities than I had expected, though it really could not compete with the EarMax in overall fidelity and involvement.

Next, I compared the EarMax with a ten-year-old NAD 1300 preamp. Here the NAD serves well as a reference to the average sound quality that you might expect to get from a receiver, integrated amp, or preamp that has been hanging around the house for a few years. The NAD tended to mush different instruments together into a slightly amorphous mass of sound, as compared to the EarMax, which delineated them well from one another.

The EarMax was also more dynamic, with quicker-sounding and more dramatic drums and bass guitar transients. In terms of individual instruments, the EarMax gave each a nice coherence and realistic body, as opposed to the NAD, which gave them some rough graininess that took away from the realism. The NAD had a thinness to its sound, not just in terms of frequency response, but also in the decay of each note and the reverberation.

The EarMax was sonically superior to the NAD in just about every department, except perhaps the top octave, where the NAD had just a touch more of the pleasing shimmer. The EarMax was superior in rhythm, dynamics, bass weight, detail, soundstaging, and definitely the kind of mellowness that you might take for granted at a live performance. The EarMax was much more involving overall, but in its defense, the NAD sold for less than the EarMax when it was new, and most of the resources were dedicated to other parts of the preamp than the headphone output.

THE PARASOUND ZAMP

The Parasound ZAMP (Zone AMPlifier) is a small (half chassis size) power amplifier rated at 30W per channel, with a headphone jack that is in parallel with the speaker outputs. It serves well as a dedicated headphone amplifier, particularly for those who like to listen loud, with plenty of power in reserve and a nice low output impedance. It

is much less expensive than the EarMax, so think of it not as a direct competitor, but rather as a sonic reference point the EarMax should be able to surpass to be worth a recommendation.

The Zamp did not have the raggedness in the treble that plagued the NAD's reproduction. It could not match the inner glow of the EarMax though. I apologize for using such a nondescript audiophile phrase, but that is just how the EarMax makes you feel. It imparts the music with a life and immediacy that bring it closer to sounding real than the other amps.

Reverberation—whether real or artificial—was more pleasing through the EarMax. It was more liquid, more enveloping. The EarMax gave individual instruments and voices more coherence as well. The Zamp's dynamics were very good, but not quite the equal of the EarMax's. Its frequency balance was almost identical to the EarMax, though, which helped in hearing the other differences.

Unlike the NAD, the ZAMP had the full measure of bass weight that the music demanded. It came much closer to the sonic performance of the EarMax in other areas as well, but could not quite equal it. It fell short in terms of absolute transparency. Small details were easier to hear through the EarMax.

Nor could it match the smoothness and the extraordinary finesse with which each note decayed. Individual instruments had a solidity which was almost touchable with the EarMax. The sense of space was superior with the EarMax as well. I can't remember ever feeling so surrounded by a band or orchestra through headphones as I did with the EarMax.

CONCLUSION

What first caught my attention listening to the EarMax was an overall balanced sound. Some say this is the most important quality any component can have, though there certainly are other elements important to true high-end reproduction. I don't mean just a balanced frequency response, but a balance between various different strengths that gave CDs a natural realism that allowed listening right down into the music. The EarMax Pro maintained this impression, and deepened it, all the way through to the end of the review period.

The EarMax Pro is an extraordinary-sounding headphone amplifier. It might be a bit pricey for such a device, but for someone who listens through the cans a lot it's worth every penny. Apartment dwellers, loud-volume fanatics, and those in crowded houses could be quite happy with just a headphone system built around this amp.

It is very involving and maybe even addictive. I found myself needing to dance every time I clamped those Grados on, which tells you something.

It's not perfect, but it has no major sonic flaws, and I highly recommend it.

pressed with increasing output voltage. The left channel distortion was higher than the right (*Table 2*). As you can see, there are not very many published specifications with the EarMax.

The maximum open-circuit output voltage swing was +5, –6V pk (3.9V RMS on my true-RMS meter), decreasing to a maximum of 0.25V RMS at 35Ω. This made it impossible to achieve the rated 150mW per channel, regardless of the load (*Table 2*). The absolute maximum output power (>10%THD) measured 1.26mW for 35Ω, 3mW for 100Ω, 10.4mW for 600Ω, and 15mW for 1k. I think that the specification sheet has a misprint, and the output should read 150mV. I found an uncomfortably loud sound level just 100mV into my 32Ω Grado headphones, where the distortion measured 0.95%.

Figure 2 shows THD+N vs. output voltage into four different loads at 1kHz. I engaged the test-set 80kHz lowpass filter to limit the out-of-band noise. The 1% THD+N clipping voltage measured 105mV RMS for 35Ω, 345mV RMS for 100Ω, 1.75V RMS for 600Ω, and 2.47V RMS for 1k.

The THD+N at a fixed output level does not vary significantly over the audio-frequency range. The biggest change (1.2% at 20Hz down to 0.95% at 63Hz) occurs with the 35Ω load. Above 63Hz the THD vs. frequency for all loads is flat to 20kHz.

The residual distortion waveform for 2.4V RMS into 1k (7.1mW) at 1kHz is shown in *Fig. 3*. The upper waveform is the amplifier output signal, and the lower waveform is the monitor output (after the THD test-set notch filter), not to scale. This distortion residual signal consists mainly of the third harmonic riding on a 120Hz power-supply component. THD+N at this point is 1%.

A repeat of this test with 100mV RMS into a 35Ω load (0.3mW) is shown in *Fig. 4*. Here, some high-frequency noise is visible on the third harmonic. THD+N at this point is also 1%.

The spectrum of a 50Hz sine wave at 100mV RMS into 1k is shown in *Fig. 5*, from zero to 1.3kHz. The 50Hz fundamental at –18dB is my 0dBfs reference point. The THD+N measures 0.22%, with the second harmonic measuring –72dBfs and the third –85dBfs. The –54dBfs 120Hz power-supply component makes up a significant portion of the THD+N, with further components at 180Hz, 420Hz, 480Hz, and 840Hz. The few additional 50Hz harmonics are all below –95dBfs. When I removed the power-supply harmonics from the THD+N computation, using only the actual harmonics of 50Hz, the THD dropped to 0.026%.

I increased the 50Hz signal level into 1k to 2.4V RMS (not shown), and the THD+N measured 1%, with the second harmonic at –50dBfs and the third at –41dBfs. The power-supply components were now much lower in the spectrum, below –85dBfs, adding only 0.018% to the total THD+N. The hum/noise level with the inputs shorted was 0.3mV RMS, regardless of the volume control setting. Hum and noise may be more audible with higher sensitivity headphones.

A repeat of the 50Hz, 100mV RMS spectrum with a 35Ω load is shown in *Fig. 6*. The second and third harmonic are just about equal at –43dBfs, but the power-supply components are all below –70dBfs. THD+N measures 1.02%. A spectrum analysis of a 1kHz fundamental (not shown) shows the third harmonic to be dominant. This suggests that the slight increase in THD below 63Hz is due to a higher second harmonic.

The CCIF intermodulation distortion (19+20kHz) at 0.283V p-p into 35Ω was a high 0.32%. As I increased the load to 100Ω, then 1kΩ, the IMD at 0.283V p-p decreased to 0.26% and 0.14%, respectively. The CCIF IMD graphs for 1k and 35Ω are shown in *Fig. 7* and *Fig. 8*, respectively. The nonlinear tube transfer characteristics produce a wide range of intermodulation products.

A 0.283V p-p multi-tone IMD signal (9kHz + 10.05kHz + 20kHz) produced a very high 1kHz IMD product of 5% into 35Ω, and 0.25% into 1k. ❖

Manufacturer's Response:

Thank you very much for the extremely careful and precise way you measured this little unit. No one—except maybe myself—found this necessary before, despite all the reviews we've had.

I'm sorry for not supplying a schematic with the unit, but I did not know about the plans for a review before it was shipped. On

the other hand, I want the Far East and other "We copy everything" people to use their own ears and brains or to buy one unit.

But as expected from a designer of your class, you managed easily to describe how EarMax Pro works without the schematic. So there are only a very few details to be corrected.

A. The bottom is not made of aluminum but of stainless (antimagnetic) steel.

B. I must add to your description of the voltage doubling for the plates' B+ voltage: The 19V AC input for the tubes filament is doubled by an auxiliary voltage (think of the third pin of the Lemo-connector) before it is given to the voltage doubling with the diodes and reservoir caps. This results in a plate-supply voltage of ~80V DC.

Because of the relatively high internal power-supply impedance and the current drawn by the tubes, the peak voltage of the doubler is not reached. The plate voltage is still very low (<40V), securing a long tube life and a longer life for our ears!

C. The wipers of the Alps pot are not directly connected to the grids of the ECC81, but via a Wima film capacitor. Why? Well, everything ages a little bit, especially tubes and volpots (and audio designers). So the theoretically worst case scenario is: The input tube (carefully selected) starts drawing a little bit more grid current than a new one (and the Alps pot has been used a lot). Then it could be possible that you hear some noises when rotating the volume knob, because the grid "current source" induces a small voltage on the pot's changing resistance. This is one of the few examples in which, in my opinion, an audio coupling capacitor is better than none.

D. I hope you had not too much trouble in measuring the high-frequency response. I use R+S UPD and B+K brands for general

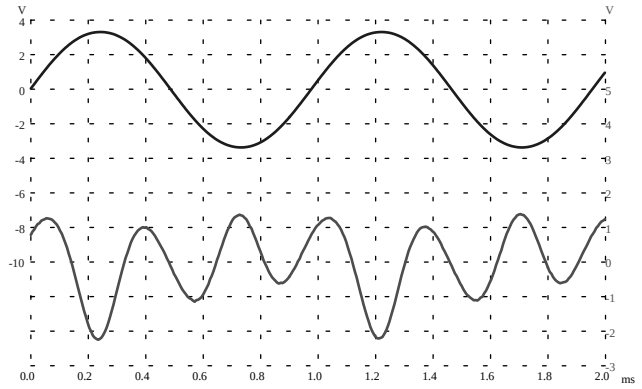

FIGURE 3: Residual distortion, 1k load. G-2017-3

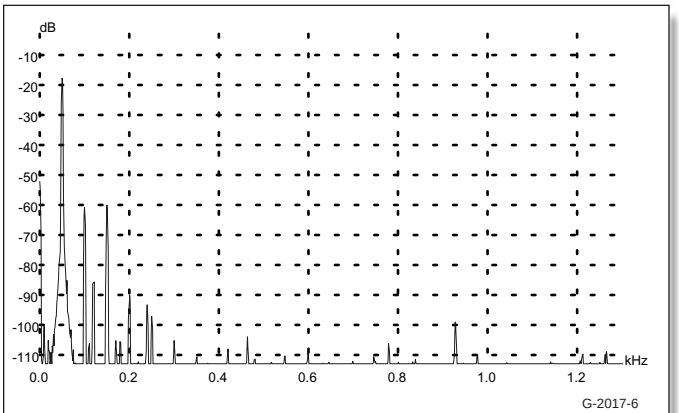

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FIGURE 6: Spectrum of 50Hz sine wave, 100mV RMS, 35Ω.

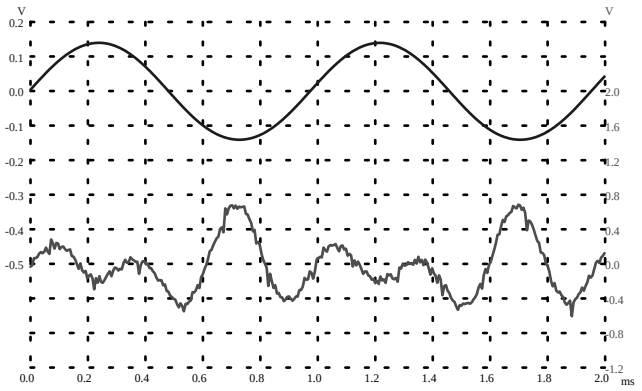

FIGURE 4: Residual distortion, 35Ω load.

G-2017-4

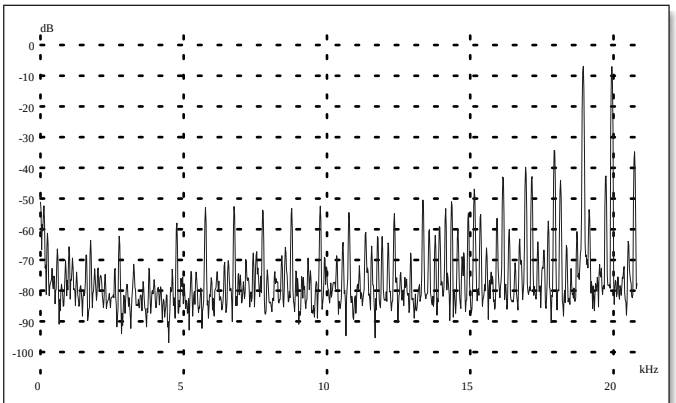

FIGURE 7: CCIF intermodulation distortion—0.283V p-p into 1k.

G-2017-7

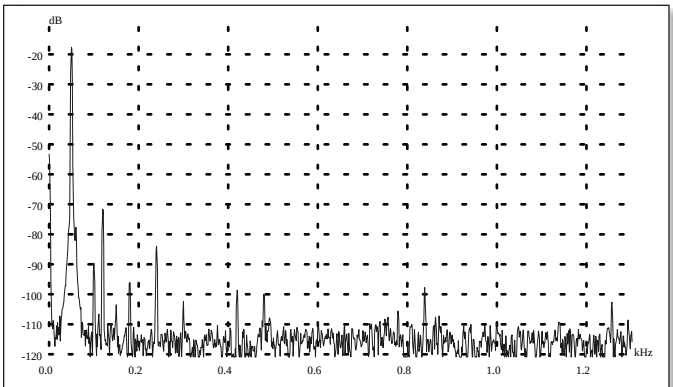

FIGURE 5: Spectrum of 50Hz sine wave, 100mV RMS, 1k. G-2017-5

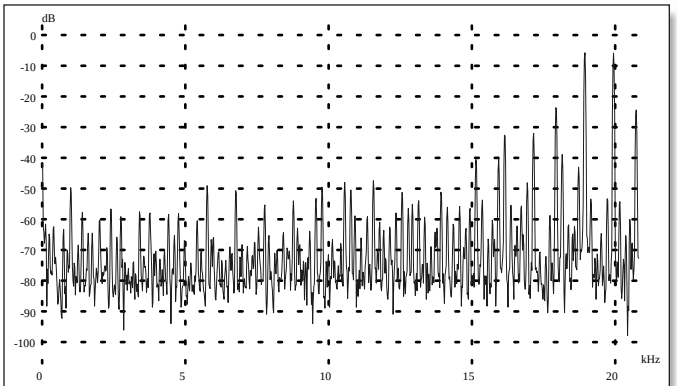

FIGURE 8: CCIF intermodulation distortion—0.283V p-p into 35Ω.

G-2017-8

audio measurements, and some HP devices for higher frequencies. Your result (530kHz on 35Ω load and 1.1MHz at 1kΩ) matches very well with the 1MHz/–3dB on 600Ω load that I stated.

The channel separation is a little bit less than what I measure, but I always shunt the non-operating channel with a 100Ω resistor to simulate a low impedance source (~–60dB at 10kHz).

The resolution of your frequency-response measurement (Fig. 1) is so high that you can roughly calculate the output impedance of the EarMax from that: It is –85Ω, as you have stated. This is quite different from my own, resulting in 37.5Ω. But it depends on the measuring method, the brand and condition of the ECC88s used, and the power-supply situation. You did, of course, use the U.S. power supply, made for 60Hz/125V nominal operation. I have opted for 125V as a safety margin because I am told that there are mains voltages up to 128V in some parts of the States.

I used an older set of 88s and a 50Hz/230V power supply driven with ~231V when measuring the output impedance. Additionally, I use a dynamic and not a static test method for that task.

My last point concerns the power output specification. It would be very easy to say: oh yes, it's a misprint; it must be 150mV instead of 150mW. Not so! It is definitely my mistake!

When I was asked years ago about that specification, I was very astonished because I found this the most unimportant spec of all, except for people who want to ruin their ears. Then I replied that it is definitely below 100mW for the EarMax and below 150mW for the Pro, having in mind that almost nobody knows how loud 1mW really is when listening with certain headphones. All I intended to mean was no risk of damaging your ears!

I had in mind that many of my friends in the business had damaged their ears in the 1980s, when transistorized headphone amps appeared on the scene that could easily supply ±15V or more even into low impedance (and efficient) headphones without clipping or any audible distortion. When I began designing EarMax and later the Pro, I wanted a device that could play loud—but not too loud—and give an easily detectable "soft clipping" distortion before anything could happen to your ears. Thank you for stating that just 100mV into 32Ω of your Grado headphones is uncomfortably loud (≈ 0.31mW). I hope that the extremely careful THD measurements you did prove that I was successful. If it is OK with you, I will give your power output/THD diagram as a reference in the future instead of xmW into yΩ.

The resolution of your distortion spectrum analysis is really great. I am unable to do the same (although my R+S UPD can easily do the –120dB) because our mains frequency is 50Hz. I actually had to use a 60Hz Sinus, and thus the picture I get is, in a way, the "reverse" of yours.

Thank you again for the extremely detailed and sophisticated job you did measuring the EarMax Pro. Not many technicians would pay so much attention to such a tiny and seemingly insignificant device.

Thank you very much for the great listening test you gave our EarMax Pro. I want to cut my answer to this part of the test very short. I can agree with nearly every detail of your description and have the same feelings when listening to EarMax—not as a technician but as an amateur musician and music lover. I play double bass just for fun.

I like most your comment that it's not perfect but I like it very much and I highly recommend it. That means to me that I'm, of course, not perfect as a human being or a technician, but maybe I have given the (thousands of) EarMax and Pro owners something to enjoy.

Stefan Brocksieper

Manufacturer's Response:

The gentlemen Hansen and Kastanovich must be highly commended for such a technically thorough and enthusiastic review of the EarMax Pro headphone amplifier. From my perspective I dare say that it is most rare to find an affordable product which endures the ups and downs of high end audio. Today's incessant question "What's new?" and the psychological need for the up-to-date, the latest greatest gear hardly apply to the EarMax and the Pro. Introduced at the 1994 Winter CES it has ravished the ears and hearts of a couple of thousand music lovers around the world.

Audio Advancements LLC is gratified to represent these wonderful products from Wuppertal, Germany, made to convey musical truth which we know remains unchanged and unchanging. Again a hearty thank you.

Hart and Beth Huschens
Audio Advancements LLC