

4 amps compared

Contributed by Mrarroyo

{mosgoogle left} 4 amps compared I have received a new portable amp to try. It is the Minibox-E (Head Direct). Here are some pictures, remember to click on them to view the full size picture:

The amp sells for \$149 plus S&H and it includes the charger and the IC shown on the picture above. I have not listened to it, and I will wait until it has at least 100 hours of burn in. This will be on Monday, 9/24 at 7:00pm. At that time I will take some internal pictures as well. Here are the technical specifications:

Technical Details

OP8610+BUF(634)
 Frequency: 10Hz-60KHz (-3dB/+0.7dB)
 Output Impedance:16 ohm-300 ohm
 SNR: >110dB
 THD+N: 0.0035%
 Battery Type: 700mAH
 Battery charge time:10~15 hours
 Battery Work Life:about 30 hours
 Dimensions: 80mm*67mm*16mm

So far I can tell you that it looks very well made and with nice features. As you can see by the pictures it arrives in a nice wooden box, I would have preferred a cover or a carrying case. I can also say that the manufacturer needs to include a set of instructions for the switches (3). All three switches engage their function when in the up-wards position.

- P to S switch in the front engages the 75 ohm resistor.
- Bass Boost Switch in the back.
- SFOR switch in the back (kind of a soundstage enhancer).I am also being loaned a Go Vibe V7 and an UHA-3 USB DAC and Headphone Amplifier. If you want to read more on the UHA-3 which retails for \$189 you can go to: Leckertonaudio.com Today (9/24/07) I received the Leckerton Audio UHA-3 amp w/ usb dac. It will burn in for at least 150 hours. Here are some of the pictures I took: The specifications on the UHA-3 are:

- Mini-USB connector for audio streaming on Windows or Mac (uses built-in USB audio drivers)
- Texas Instruments PCM2706 USB Audio Interface
- Cirrus Logic CS4344 DAC
- Lithium-ion rechargeable battery (18 hours typical runtime)
- Automatic battery recharge via USB
- 1/8 inch (3.5mm) analog audio input jack
- 1/8 inch (3.5mm) headphone jack
- High-gain (18dB) and low-gain (0dB) settings
- High-frequency switching regulator for low-noise +/-6V supply rails
-
- High-power output stage using parallel Analog Devices AD8512 op-amps
- Up to 100 mW into 32 Ohms, <1.0% THD
-
- Up to 115 mW into 100 Ohms, <1.0% THD
- Up to 40 mW into 300 Ohms, <1.0% THD
- 0.05% THD, 1 mW into 32 Ohms
- 0.02% THD, 1 mW into 100 Ohms
- 0.008% THD, 1 mW into 300 Ohms
- 13 dBu into high-impedance load (>1 kOhm), <0.01% THD
- -116 dBV A-weighted output noise floor in low-gain mode
- Frequency response: 20 Hz to 20 kHz, +/-1 dB
- Hammond extruded aluminum enclosure, 3.2" x 2.1" x 0.9" (approximately the size of a credit card)
- LED power and charge indicators

- includes 36" stereo 3.5mm cable and 36" mini-USB cable Note: I decided to "check under the bonnet" as some would say. Here is what I found on the Minibox-E and the UHA-3. The rechargeable battery setup in the UHA-3 makes it very easy for all owners to replace. No soldering required! The third amp to be tested/compared has arrived! It is a Go-Vibe Version 7. I have asked the owner to provide me with information on features on this unit, like does it have a

charger or not, and if it is the maxed version of the amp. Once I receive it I will post the information, meanwhile here are some pictures. Thanks to the generosity of Leckerton Audio, Nankai, and dw6928 I have received three new portable headphone amps to listen and post my impressions. The corresponding amps are: UHA-3, MiniBox-E, and a Max version of the Go-Vibe V7.

All three fit comfortable in the category of portable being on the smaller end, although not miniature. The UHA-3 has a built in USB DAC, which I will not be testing at this time because I do not have my iBasso D1 to compare too. I will start by describing the physical attributes of each of these units, w/ features I like and those, which I believe, can be improved upon.

When I first received the MiniBox-E I was surprised at its small size and overall quality presentation. I was a bit worried that the volume control would be easy to accidentally move and cause the volume to reach WAY LOUD levels! Well I am glad to report that in the configuration that I would use it that would not be the case. See the picture below. The MiniBox-E also makes it very easy for the diy'er to try new op-amps. This because of the sockets already installed by the manufacturer. At this time I do not have many op-amps available so I will pursue swapping LM4562 for the NE5532 in the future. The thumbnail below demonstrates how easy the swapping of op-amps will be. The MiniBox-E has three additional switches (to the power switch) that further expand the use of the unit. The P to S switch adds a 75-ohm resistor to both the left and right channel, same value as the P to S adapter sold by Etymotic. IMO this is a nice feature for those w/ sensitive IEM's or those who listen at very low volumes. The other two switches are a bass boost and a soundstage expander (SFOR). More discussion on the switches in the sound comparison section.

Lastly I will mention that a silver Mini to Mini and a wall wart to charge the internal battery are included in the purchase price of \$149. In the packaging/ergonomics my only gripe is that an instruction booklet should be included to describe the various features/functions.

When I first opened the Leckerton Audio UHA-3 the first thought that came to mind was: tidy. There is a flow to the way the amp is put together, almost like it should be. This amp features an USB DAC and Leckerton includes an USB Cable, which also charges the internal battery.

With regards to the Lithium Ion battery I am happy to report that it would be an easy swap for any user. Once you have removed the two front and two rear screws (no need to remove the volume pot knob) you can slide the board out and the internal Lithium-Ion battery is held together in a spring type holder. See the thumbnail below to better understand what I am trying to describe.

Sadly the use of SMT components prevents the average user from op-amp rolling. However when you consider the amount of components needed to have an USB DAC w/ a Headphone Amp in such a small package it is mind blowing!

The UHA-3 has a gain switch Low is a 0dB and High is 18dB. This is the same as gains of 1 and 6 respectively. An idiosyncrasy of the UHA-3 is that the on/off switch is on the back.

The UHA-3 comes with an instruction sheet. Two minor gripes in the packaging/ergonomics would be that rubber feet should be included and that it should be made in black as well as silver. Not much as far as gripes considering that you can get a pack with 12 rubber feet at Radio Shack for about \$2.00 Note: The input and headphone out plugs are far apart for most users, if you use the largest mini plug on BOTH the input and the headphone they will not fit. If used only on the input (example: an ALO iPod Dock) then you will be ok.

It is good to get my hands on the Go-Vibe V7 thanks to dw6928. Having owned a V5 and two V6 it feels like an old friend is back. I love that Norm chose to use the large thumbnuts to secure the battery plate. I have been know to be a klutz and lost small screws or nuts. They may look peculiar but IMO it is the right move.

The enclosure is the tried and true Hammonds just like in the UHA-3. It is black J and it does have the fancier rings at the end caps. The unit I have on loan is the max version w/ a DC input (no charging) to help prolong the battery life. It has a gain of 4.

I do have one gripe w/ the packaging/ergonomics and it is with the fact that the battery is not firmly held in place. Although damage may never occur having the battery move around does not inspire confidence. If it were my unit I would find a way to prevent or at least minimize the banging around of the battery.

For today's comparison I will be using my 4th Generation iModded iPod Photo 60Gb. The files are apple lossless, and the interconnect is a Revelation Audio 99.999% Silver Cryo. For headphones I will use an Ultrasones PROline 2500 re-terminated to a 1/8" plug and a Senn HD580 w/ an HD650 cable and an HD600 grills. Since the HD650 cable terminates in a 1/4" plug I am using a Grado 1/4" to 1/8" adapter.

For music I will be using:

- Keiko Matsui, Night Hawk's Dream from the Full Moon and the Shrine CD
 - Fourplay, Free Range from the Yes, Please CD
 - Jane Monheit, Over The Rainbow from the Come Dream with Me CD
 I started the listening test and everything was going well, or so I thought. Well, I realized that I had been burning in the UHA-3 via the USB input. Since now I am feeding the signal via the mini input I realized that all the components going from the mini input to the amp section have had 0 hours of burn in. So I will burn in the amp using the mini input for the next week or so. I hope I can keep dw6928's Go-Vibe V7 for an extra week.

Sorry guys for my error will come back on this next week.

Well today (October 6, 2007) I was able to complete the 3-way amp review I started a couple of weeks ago. However instead of a three-amp review it became a 4-way amp review, since Vorlon1 added a Mini3 by Rockhoper.

Of course these being new amps to both of us we decided to use old favorites as points of reference. To that effect we chose: LaRocco PRII MkII, SR71, Portaphile V2^2 Maxxed w/ LT1210 and Black Gates, Tomahawk, Porta Corda MkIII, Supermicro III, and TTVJ Millet Portable Amp.

Below you will find thumbnails which when clicked will take you to a full size picture of the amps described. The first thumbnail is of the 4 new amps and the second thumbnail of the old amps used as a point of reference.

This time in a slight departure I will start listing a couple of items, which I believe, need to be improved upon. The Rockhoper Mini3 needs to have a bit more attention to detail in its overall construction. Yes it is very inexpensive at \$125 including a wall wart but a little more attention to detail should be given to its construction, it just looks amateurish. The UHA-3 (like Meier's amps) has the headphone out to the right of the input. The majority of portable amps have the headphone out to the left of the input, which is IMO more convenient especially if you are using a headphone that terminates in a large plug.

There were two great surprises amongst the 4 amps we tested today. Both of these units (in our opinion) sounded better than the SR71, which is a major accomplishment. For those who have not followed the SR71 it is thought by most that it is a very detailed sounding amp with very good soundstage and clarity. What makes the finding more interesting is that both of the amps cost a third of what the SR71 does.

These were the MiniBox-E and the Mini3. Those who prefer a wide soundstage (I do) would prefer the MiniBox-E; the ones who prefer a warmer presentation in which the treble exhibits a softer and rounder edge would prefer the Mini-3 (Vorlon1 does). However we both agree that w/o having them side-by-side you would not notice the difference. We both agree that these two amps are fantastic values and we could be happy if it was the only amp available. The MiniBox-E has sockets on its buffers and amps, so I will be rolling op-amps in the near future. I am optimistic that the MiniBox-E sound can be further improved upon and it should make for a great portable unit.

Both the MiniBox-E and the Mini3 have a bass w/ great punch and impact. IMO the bass boost switch in the MiniBox-E should be toned down a bit. When it is engaged the bass becomes a bit uncontrolled and boomy. Perhaps if the boost is cut in half it would make for a more useful feature, as it is I do not see myself using it. The P to S switch is well implemented and it is a nice feature to have for those w/ sensitive iems.

These two amps extend well into the treble with a very nice midrange. Those who like a more of in your face midrange would prefer the Mini3. The MiniBox-E has as good a midrange but it is presented in a wider soundstage so is not as much in your face. As you can imagine Vorlon1 has a slight preference for the Mini3's presentation while I have an affinity for the MiniBox-E. These differences are not night and day but not subtle either. With them side-by-side it is an easy thing to distinguish.

The Go-Vibe 7 uses the same chip (AD8397) as the Mini3 but they sound quite different. I personally believe the V7 sounds better than the V5 or V6 while retaining the Go-Vibe sound. I preferred the sound of the MiniBox-E and the Mini3 with the Go-Vibe 7 slightly behind. It has a nice punchy presentation with a good extension into the higher frequencies. The sound is more in your face like the Mini3 and it has a similar size soundstage.

The UHA-3 has a lot of good features but I believe it needs a bit more development. No it does not do anything bad and some things it does well. However it fails to get my foot tapping as the other 3 amps did. Basically there is a slight veil to its presentation, where it does not let the music come through. Furthermore I hear a bit of graininess, neither my wife nor Vorlon1 heard it. If you use a laptop as your source and you need an amp/dac the UHA-3 is an attractive alternative, however if you can put up w/ the increase in size and price I would select the iBasso D1. I certainly hope Leckerton Audio can squeeze a bit more performance out of the UHA-3 because it could become a much sought after amp/dac.

As a recap:

1. MiniBox-2
2. Mini3

3. Go-Vibe 7
4. UHA-3

As a reminder, 1 and 2 are pretty much interchangeable. Yes they are that close that their individual presentation differences can have some choose one over the other. {mosgoogle left}