Astell&Kern AK120 Portable Audio Player
Digital music on-the-go finally reaches true high fidelity status.
Review By Steven R. Rochlin

Portable audio such as the new Astell&Kern AK120 as reviewed here, for me, started with a transistor radio decades ago. The AK120 may be the latest and greatest in the marketplace today, yet it also brings me back to my youth in some respects. As a teen I had the Sony D-5, Aiwa top-line stereo cassette/recorder, D-25, D-88, D-555, Panasonic's world's first dual driver 'fontopids' in-ear 'phones... Of course I'd wear the bright yellow Sony 'Sports' waterproof FM radio/armband while skimboarding on Florida beaches back in the 1980's. Have an interesting collection of both vintage and modern digital players, yet nothing here to date could play 'master quality' files including 24-bit/192kHz and DSD. Yes my Tascam professional HD-P2 field recorder is capable of playing 24-bit/192kHz music files, yet it is a portable recording unit more than an easy to carry portable music player plus the Tascam can not playback DSD. With all the new 24-bit/192kHz digital-to-analog chips beginning to reach the mobile market, portable audio has finally come of age in reaching the same resolution as digital master tape. What took you so damn long!

Sony's D-5 was the world's first portable CD player and cost me some serious money back in the day. With the Astell&Kern AK120 setting music lovers back $1299 when anyone can buy a 'normal' unit for $300; it makes one sit up and take notice. Sure it has many bells and whistles plus hits all the right 'audiophile' buttons in the specs department. Being the second generation unit also means the initial growing pains have been properly sorted. Looking at the AK120 build quality will quickly make one realize this is indeed a very special unit. Still, $1299 is long green and the AK120 had better deliver the audio goods. In the back of my mind I still have to ask the question....

Why would an audiophile want the new Astell&Kern AK120 24-bit/192kHz and DSD portable music player? Apologies for sounding a bit pessimistic here, yet many old-time audiophiles tend to sit in their darkened rooms, usually alone, listening to about five or six of their favorite albums that are recorded 'perfectly' to match their system. Then we have the modern mainstream music lover who seems to always be on-the-go. They want to hear their tunes at the best quality and desire to enjoy all the music they can at their fingertips. This music can be stored on a memory card, via Pandora/Rhapsody/etc, stored in their cloud, etc. Of course all generalizations are wrong, yet as the older generation of audiophiles seem to be dying off we welcome a new generation of music lover who wants to enjoy their tunes with friends, share their music with others online and be far more social than their dying off predecessors. In fact modern popular music has changed so dramatically from the early days of high fidelity that we in the industry are experiencing the push-pull of old school 'must be acoustic music or old rock' to the more modern thinking of 'I want it all to sound good including this electronic dance/pop/techno/house/trance/etc recording'. Of course both are completely false, unless on the former you were at the actual recording venue and the latter, well, no one really knows how synthesized/electronic instruments should sound with 100% accuracy. Come to think of it, do any of us really know how Jimi Hendrix guitar truly sounds in the strictest and most absolute sense? Of course not!

Be that as it may, none of us can argue that portable music has been on the rise thanks to Apple's personal portable devices selling by the millions. We all know Apple devices have been going downhill in sound quality and of course we enthusiasts look for ways to greatly improve its deficiencies. Today we have a variety of devices that 'fix' this sound quality problem by using an external DAC connected to an Apple device. Sure this works, yet we are really trying to fix an inherently badly designed audio section within a multi-use device, which when push comes to shove is really just an all-purpose computer with the ability to handle apps and phone calls, with audio sound quality obviously taking a back seat by Apple. The good news is that soon
many portable audio devices will take advantage of the new 24-bit/192kHz and DSD mobile audio chipsets only recently (as of this writing) reaching the marketplace. One day we will look back at the AK120, and its predecessor the AK100, as being amongst the first ‘popular’ high resolution portable music players. It will be akin to how I look back at the Sony D-5 and D-25 today. So until the next generation of phones and tablets come out in the coming months, for this brief moment in time the AK120 is ahead of the pack.

The Geek Files

I say ‘geek’ in a good way, because as the Rush song 2112 goes “and the geeks shall inherit the Earth’. Ok, they said “meek” yet the saying is still true as we geeks have been busy changing the world and do not care how we look walking around with two mobile devices strapped to one another using a rubber band. Most people simply use their phone, yet we high fidelity freaks aspire to a higher standard. Sadly, today there are very few mobile devices able to handle 24-bit/192kHz audio in this 320kbps mp3 world. The good news is that, as previously mentioned, this will be changing very soon, so in a sense here is a glimpse as it were to what we can expect in the future. Am sure you are wondering how a reviewer can talk about the latest and greatest high fidelity audio device like it was yesterday’s news. Well, it soon will be, with apologies to the great folk at Astell&Kern, as within the next 12 months we shall be seeing some interesting things afoot in the mobile audio space! Still, this is what we have to work with, today, and so here are my impressions of the AK120.

Technical

If you are an avid music lover on the go, odds are you are already quite familiar with the Astell&Kern AK120. Wrapped in an impressive high quality brushed aluminum body, the AK120 builds on the company’s already popular AK100. The AK120 has a small 2.4” QVGA (320 x 240) IPS touchscreen and can handle virtually every digital audio file type including WAV, AIFF, FLAC, ALAC, APE, MP3, AAC, WMA, OGG, and DSD. A pair of Wolfson WM8740 24-bit DACs handle the audio processing, with each one independently dedicated to separate left/right audio channels.

Measuring in at a reasonably-sized 2.33” x 3.5” x 0.57” (WxHxD) and weighing only 5 ounces, this tiny unit packs a lot into such a small package. The protected volume wheel is a design statement of the Astell&Kern identity. Of course all the usual feature-set is included such as using the touchscreen to choose playlists, genera, track, artist, etc. Included is a very nice dark brown leather case that fits perfectly and provides easy access to all the most-used features. To help ‘fix’ the sound quality of some headphones or music tracks, there is a five-band touch equalizer (EQ) too. We all know .mp3 is low quality, yet that is what most mainstream consumers use today. Did I mention that the AK120 supports playback of 24-bit/192kHz and SACD (Super Audio Compact Disc) DSD (Direct Stream Digital) too. The good news is that 16-bit/44kHz CD quality files within a portable audio device are so 1990’s and today we have leapfrogged to 24-bit/192kHz and SACD that achieves many multiples of higher sound quality than mp3. To quote the company, “Astell&Kern natively supports MQS (24-bit / 44 - 192kHz) which is the closest to the original sound that the original recording artist intended. Mastering Quality Sound (MQS) is a collection of lossless & high-resolution audio source formats that typically comes encoded with 24-bit, 44 to 192kHz of bit/sampling rates. Since MQS delivers about 6.5 times more detail than a conventional CD (16-bit/44.1kHz), listeners can enjoy more a realistic music experience.”

Prelude

In the early 1980’s was into portable audio chachkies big time as was a very mobile person. Surfing, skimboarding, eventually being homeless for months on end. For me, high quality music on the go was not just a dream and a necessity like food and water! Maybe that’s reaching a bit, yet have literally created a few mobile audio concoctions over the years – some of which actually sold to others’ as a package – in my quest for great sound on the go. This may help to explain my shootout titled Best Of The Portables For The Music Lover On The Go a decade ago! Have tried many portable units over the past few decades, with a wide variety of results over the years including the early Rio players, Digital Foci 80 GB Media Buddy, etc. Anyone remember those??? While to date most portable units focused on mp3 and perhaps 16-bit/44kHz, the Astell&Kern AK120 bring modern chipset and thinking to the table. Today we high fidelity enthusiasts can enjoy true lossless audio on the go. Lastly, am glad to see the use of equalization being acceptable in high-end audio circles. In my early years did try the Cello Palette and while it had benefits, perhaps due to its 100% analog nature did add a layer of greeyness I found unacceptable and thus returned the unit. Then Glenn Zelniker, a brilliant digital audio designer who had a company around the corner from the high-end store I worked at years ago in Gainesville FL, introduced me to his then new Z-Sys 24-bit/96kHz state-of-the-art (in 1998) rpd-1 digital equalization system. Pure digital equalization was first used by Yours Truly in the Sony D-555, yet the Z-Sys was far more involved and had much higher resolution.

As for the all-digital five-band EQ in the Astell&Kern AK120, did not need to use it as much as initially thought yet appreciated the ability to ‘fix’ certain albums that could use a bit of correction. The 2.4” IPS touchscreen is bright enough for normal outdoor use and was relatively easy to control. The volume knob is impressively designed and protected to some extent. This is a very smart move by Astell&Kern for those who tend to be more accident prone. All plugs were easy to access and inserting the two SanDisk Ultra 64 GB microSD cards was a snap. All in all the AK120 physical unit is a user-friendly design, though the GUI could use... read on.

Sound Quality

http://www.enjoythemusic.com/magazine/equipment/0813/astell_kern_ak_120_review.htm
Will come right out and say that the AK120 is the best sounding compact portable audio player I have heard. With advantages including the ability to play 24-bit/192kHz and DSD files it makes perfect sense. As garbage in (mp3) equals garbage out and 16-bit/44.1kHz CD quality can not hold a candle to the modern lossless file types including WAV, FLAC and DSD. For now, many mainstream consumers still deal with mp3 files they are paying top dollar for them from Apple and the like! Smart consumers will eventually realize this overpaying for low quality music and seek out sites that offer far better quality for virtually the same cost. Sites that offer high resolution music downloads include Channel Classic, 2L Groovers, HighResAudio and of course HDtracks. The good news is that soon such higher quality music files will be appearing on more mainstream online music services.

With my fave Ultimate Ears 18 Pro custom IEM put to use, it was easy to hear the difference between lackluster mp3 and lossless file types of course. Like, duh!! With high resolution music the AK120 allows one to delve deeply into the mix and enjoy the subtle nuances in classical and jazz music as well as explosive bass beats and phasing effects in pop music. Another benefit of the AK120 is the five-band equalizer, as not all albums are recorded well and some EQ can greatly help. The AK120 had no problem driving the Ultimate Ears 18 Pro to high output levels, the very challenging HD600 did not fare as well though. Still, for most sanely designed headphones and IEMs the high quality headphone amplification output from the AK120 should easily fit the bill. In fact the new AK120 uses a beefed up headphone amplifier as compared to their first model, the AK100.

If you love music with strong rhythm content, the AK120 will keep you dancing to the beat. PRAT (pace, rhythm and timing) is very good and on the more neutral side versus boogie, which is also how I’d describe the sound profile of the AK120 in general. Classical and acoustic jazz music sounded very natural without being too thick (bass heavy) or too thin (enhanced high frequencies). It is a very neutral sounding unit that does not take any major liberties at the expense of achieving accuracy. While many current portable music players use only a single DAC to handle audio, the AK120 uses two DACs for a true dual-mono set up internally. This ensures excellent specifications as it isolates the left and right audio channels... which lead to higher sound quality. The internal headphone amplifier has an abundance of power to drive all but the most challenging headphones. My only very small complaint is that it seems to be missing just a touch of ultimate transparency.

As a died-in-the-wool mobile music lover, the AK120 was not just used with esoteric setups or treated like a fragile Fabergé egg. The unit was also put through the paces while off-road bicycling, in the Bentley GTC and long walks (off short piers of course ;) ). In the durability department, the AK120 is excellent. Am not saying abuse the unit, yet if you just so happen to drop it from four feet high or it gets splashed with water while washing your car there are no worries. The AK120 is truly high quality in many respects.

Since the AK120 is a portable music player, naturally it made the rounds with off-road bicycling where it handled the rougher treatment without complaint and of course in the GTC. The brushed aluminum externals and included dark brown leather case looked appropriate in such a scenario against the handcrafted burr Walnut work, which shows you the high quality that Astell&Kern’s AK120 exudes.

Ringing up Kimber Kable soon resulted in their all silver wire GQ Mini cable arriving at my doorstep. Spec’ing male stereo 1/8” headphone plugs on both sides, the advanced Kimber Kable GQG2/geometry (four-wire) braid keeps external noise such as EMI/RFI low while delivering top-quality sound. Use Kimber’s silver Select cables in my main rig with great results, so their GQ Mini was a natural choice. Having all three ‘solutions’ to hook into the Bentley GTC -- two by Dice/Audiovox and one factory unit – decided the Dice Electronics/Audiovox MediaBridge AMBR-1502-AVW with its balanced analog audio circuit to sound best.

Now before you say car audio can’t sound good, you closed-minded types can now take your head out of your ass, please. Yes I went there, yet did say “please” too. Car audio can indeed sound very good and anyone with even some sense of hearing will seek out a car with a great audio system or have one custom installed. You do love music wherever you go, right? Due to the car’s intrinsic low noise floor combined with top-line three-layer acoustic absorption convertible top, it was easy to hear sound improvements over the stock system’s maximum CD resolution of the same tracks in the car’s CD player or via the AK120. I believe that once true music enthusiasts hear the difference they will be hooked on car audio! For those curious, the GTC sounds better than the GT due to the three-layer acoustic absorption convertible top. It is interesting how many of us may take great care of the acoustics within our home listening room via dampening the first reflection points yet forget about the detrimental time-smearing ceiling reflections.

http://www.enjoythemusic.com/magazine/equipment/0813/astell_kern_ak_120_review.htm
Astell&Kern AK120 Portable Audio Player Digital music on-the-go finally reaches true high fidelity status.

Review By Steven R. Rochlin

My main gripe is the lack of speed sensing volume control. Thus fast turns of the knob would result in a faster-paced adjustment. Still, must admit whilst I do enjoy the fine control of the volume adjustment, which is excellent by the way, just wish it was a bit faster. My next complaint would be to make the top Left Arrow (back touchscreen arrow) a bit bigger. It is not my eyes more than the size of my fingers, which are normal, yet have trouble at times with the back GUI arrow. Odds are those with 'fat fingers' will be cursing up a storm at some point when using the AK120. Also, the internal processor seems a bit slow, thus as an example when I change from Album to Artists for the first time it takes a full six seconds to initially load up and appear on the touchscreen. To be fair, have fully loaded the unit with over 9,000 songs as a test to see how she handled them all and once these are loaded in the sub-menu structure for the first time after initial turn-on and six second wait, they do seem to load fairly fast.

My only other main gripe is that Bluetooth is, frankly, almost unusable as it adds a very low yet still discernable level of background electronic noise. Thus I can not use the AK120 for music and have my Samsung Galaxy Note II or Windows Phone, etc Bluetooth linked so I don't miss a phone call for true critical listening. Verified this Bluetooth radio noise problem with another reviewer and not sure if a future firmware fix is to be expected or this noise situation is an inherent design flaw with the AK120. Only time will tell as the Astell&Kern AK120 is still a 'young' unit with plenty of potential to be exploited with future firmware updates. Note that the final version of firmware used during this review is V1.32.

On the plus side, thank you Astell&Kern for including hardware buttons for track forward/back and play/pause. Too many manufacturers of touchscreen devices seem to think hardware button are not necessary. Far from it and am sure those of you with the AK120 will also prefer the fast response from the hardware buttons on the side of the unit.

Of course I did try the AK120 as a USB DAC too. If you have not made the leap to an external USB DAC for your computer system, the AK120 will bring high-quality sound to your once limited -- and usually lackluster -- stock computer setup.

Conclusion

Astell&Kern's AK120 is right now perhaps the best portable high resolution high fidelity music player in the marketplace. Soon there will be many more such devices as we are already seeing the likes of Colorfly, FiiO and others in the marketplace. Due to the fast evolution of mobile DACs, soon we will have all new mobile phones and tablets easily handle higher than CD resolution 24-bit/192kHz music files and then the game will get very interesting. I predict hardware rollouts of these units in Q4 2013. For today, there are very few choices and the AK120 is a prime example of early adoption of technology that will be coming soon to mainstream devices. Of course as an early adopter you get many benefits, yet also pay the $1299 price. I recall the early adopters paying $5000 for a Sony SACD player, which today is trounced by a few hundred dollar Oppo unit.

So who should get the AK120? Good question! Early adopters and those who enjoy living on the 'bleeding edge' will of course buy one. Music lovers seeking the very best right now will jump aboard too. Cautious buyers usually stay on the sidelines until such things take a stronger foothold in the industry as will those who wait for refinements and the inevitable lower pricing as technology matures. Of course many of the new devices probably won't handle DSD, nor be a USB DAC. One thing not to be minimized is how important the high quality analog amplification stage is within the AK120 and how crucial it is for usable output in a variety of situations.

Me? I'm sold hook, line and sinker. Send me the invoice via e-mail or I'll hand the great folks at Astell&Kern cash money at RMAF 2013. Do you want Visa or MasterCard, PayPal, CAD/US Dollars, Euro, Renminbi, Swiss Franc, Yen... and as Astell&Kern is a Korean company could easily get Won if needed. To coin a phrase, 'I'll give you my AK120 when you pry it from my cold, dead hands'. Once you hear how great the 24-bit/192kHz and DSD files sound on the AK120 in the arsenal. If your car has a great sound system and offers analog input, until you get one you can only dream of how great the AK120 can really improve the sound... until you insert the AK120 and press play of course. The high durability, excellent quality engineering and 192 GB of flexible storage space means the unit should bring many years of musical bliss. Being an early adopter is a great thing for music lovers, as we get to enjoy the music at the bleeding edge of technology before others. Of course in the end what really matters is that you...
Enjoy the Music,

Steven R. Rochlin

---

**Specifications**

Type: Portable, battery powered stereo digital music player  
Display: 2.4 inch QVGA (320 x 240) IPS Touchscreen  
Supported Audio Formats: WAV, AIFF, FLAC, ALAC, APE, MP3, AAC, WMA, OGG, DSD, WAV, AIFF, FLAC, and ALAC  
Sample Rate: 8 to 192 kHz @ 8, 16, or 24-bits per sample  
Output Level: 1.5Vrms + R: 1.5Vrms (Condition No Load)  
DAC: Two Wolfson WM8740 24-bit DAC  
Decoding: Supports up to 24-bit / 192kHz decoding  
Charging Interface: Micro USB Type-B  
Interface: USB 2.0, optical in/out and stereo headphone out  
Battery: 2350mAh 3.7V Li-Polymer for ~16 hours of PCM playback, 6 hours for DSD  
Dimensions: 2.33" x 3.5" x 0.57" (WxHxD)  
Weight: 5 ounces  
Firmware upgrades supported  
Price: $1299

**Company Information**

iriver House / Astell&Kern  
902-5 Bangbae-Dong  
Secho-Gu  
Seoul, Korea

Voice: +82-2-3019-1700  
Fax: +82-2-3019-1799  
E-mail: webmaster@iriver.com  
Website: www.iriver.com

United States Distributor  
Astell&Kern  
39 Peters Canyon Rd.  
Irvine, CA 92606

Voice: (949) 336-4540

---

Astell&Kern AK120 Portable Audio Player Digital music on-the-go finally reaches true high fidelity status. Review By Steven R. Rochlin