

# iFi micro iDAC2 Review – Portable DAC with DSD Support

The PC Enthusiast June 14, 2016

Sometime mid last year, iFi Audio released the second generation of their portable “micro” digital to analog converter – the **iFi micro iDAC2**. This is the direct replacement of the now discontinued iDAC. The Micro iDAC2 still features iFi Audio’s signature look and design, but it now comes with a beefier components compared to its predecessor. The iDAC2 comes with a totally new circuitry design following the success of the nano iDSD and micro iDSD. The iFi iDAC2 is also competitively priced, currently retailing at around \$349 USD. So, is the iDAC2 (significantly) better than the first iDAC? I can’t answer that question since I wasn’t able to try the iDAC. But what I can share to you is if the new micro iDAC2 is a good investment or not, specially for those who are looking for an external digital to analog converter. Please continue reading our iFi micro iDAC2 review below and find out.



## iFi micro iDAC2 Review

First let’s take a look at the set of features and specifications that the micro iDAC2 comes with. Then let’s take a closer look and what’s under the hood of the iDAC2 and we’ll proceed with my subjective listening experience of this product.

The iFi micro iDAC2 is the company's latest digital to analog converter released last 2015. It features an all new chipset powered by Texas Instruments Burr-Brown DAC chip that supports True Native playback of PCM and DSD formats. This basically means that if your audio is PCM it will be played as PCM and if it's DSD it will play as DSD and not converted to PCM. iDAC2 doesn't have any format conversion or re-sampling, as it supports formats from 16/44, 384kHz, and all the way up to Quad-speed DSD256.

Aside from the Burr-Brown DSD1793 DAC chip, the micro iDAC2 also features Class A Tube State valve amplification. Its analog stage has two Elna Japan Silmic II audio grade components, said to be the highest available grade and best audio grade electrolytic capacitor around. There's also a Class A buffer that combines an N-Channel J-Fet and a PNP bi-polar transistor allowing loads of up to 600 Ohms.

The iFi micro iDAC2 offers a decent amount of connectivity options. You have a USB 3.0 as its primary input, a standard 3.5mm headphone out, an RCA out and a SPDIF output. With the SPDIF output the iDAC2 can received USB signal and output it to a digital SPDIF signal, that can be connected to a streamer or A/V amplifier with an onboard DAC.

The Elna Silmic II is not the only highest grade component found on the micro iDAC 2. iFi also used TDK COG capacitors and Vishay MELF resistors making sure that there is no weak link along the chain and the signal's path is clean and pure.

#### **iFi micro iDAC2 vs iDAC?**

For those who are interested on the comparison between the iDAC2 vs iDAC, like I said earlier I don't have a firsthand experience of the iDAC. However based on paper, the first iDAC features ESS Sabre DAC chip that supports 24bit/192kHz audio format. If I am not mistaken I think it's an ES9023 Sabre DAC chip. The iDAC also doesn't have a Class A Tube State amplification and obviously supports only PCM formats.

Based on the set of features and specifications alone, I say the iDAC2 is a significant jump from the iDAC. So I find it quite unreasonable if you'd choose the iDAC over the iDAC2.

Below is the full specification detail of the iFi micro iDAC2. After that let's proceed to the next page and take a closer look at the device.

## iFi micro iDAC2 Specifications

<b>Input:</b>	USB3.0 (USB2.0 compatible)
<b>Output:</b>	SPDIF RCA (only PCM up to 192KHz) Audio RCA 3.5mm Headphone
<b>Formats:</b>	44.1/48/88.2/96/176.4/192/384KHz PCM 2.8/3.1/5.6/6.2/11.2/12.4MHz DSD 353/384KHz DXD
<b>DAC:</b>	Bit-Perfect DSD & DXD DAC by Burr Brown (1-DAC Chip; 2-Channel; 4-Signals)

<b>Filters:</b>	
<b>-PCM:</b>	Bit-Perfect/Minimum Phase/Standard, Digital filters selectable
<b>-DSD:</b>	Extreme/Extended/Standard, Analogue filters selectable
<b>-DXD:</b>	Bit-Perfect Processing, Fixed Analogue filter
<b>Line Section:</b>	
<b>Output:</b>	2.1V (+/-0.05V) fixed
<b>Zout:</b>	< 39 Ohm
<b>SNR:</b>	> 114dB(A) @ 0dBFS
<b>THD+N:</b>	< 0.0025% @ 0dBFS (100k Load) < 0.025% @ 0dBFS (600R Load)
<b>Headphone Section:</b>	
<b>Output:</b>	> 350mW (2.40V) into 16R (<10% THD+N) > 34mW (3.20V) into 300R (< 0.1% THD+N)
<b>Zout:</b>	< 2 Ohm
<b>THD+N:</b>	< 0.0025% (1V into 16 Ohm, 0dBFS)
<b>SNR:</b>	> 114dBA (3.2V into 16 Ohm, 0dBFS)
<b>Others:</b>	
<b>Power consumption:</b>	<1.5W
<b>Dimensions:</b>	158(l)x68(w)x28(h)mm
<b>Weight:</b>	265g(0.58 lbs)

## Packaging and Closer Look



If you have bought an iFi device before, then they haven't change the packaging for their portable devices at all. You (still) get that clean white rectangular box, pretty much standard for most of iFi's products. In front of the box you see the iDAC2's photo and some of its features and specifications are printed at the back of the box. I actually like this kind of standard packaging. You can pretty much stack up these boxes neatly, specially if you bought or have other micro devices (like micro iDSD, iCAN SE, iTube and etc). Even the smaller nano series, like the [iFi nano iDSD](#), have the same packaging.



The micro iDAC2's packaging includes a reading material, an RCA interconnect, USB 3.0 to USB Type-B cable, four rubber feet and the micro iDAC2 itself. By the way, I noticed that iFi changed the rubber feet compared to the previous ones. iFi's logo is engraved on each rubber feet, but the rubber feet itself is thinner compared to the rubber feet that came with

my micro iDSD. I like the previous rubber feet that came with my micro iDSD. It's a little bit thicker, thus giving it more clearance between the bottom of the device and the surface.



Above you see the top and bottom view of the micro iDAC2. The enclosure is pretty much standard design of an iFi portable device. On the top portion, there are three tiny holes with their respective labels. The play or arrow indicator changes color depending on the audio format that you are feeding the iDAC2. The LED colors are as follows: Green - 44/48 kHz, Yellow - 88/96kHz, Cyan 176/192 kHz, White DXD352/384 kHz, Blue - DSD2.8/3.1 MHz, and Magenta DSD5.6/6.2/11.2/12.2MHz.

At the bottom of the micro iDAC2, you can find the labels for the respective connectors; and some of its features are printed at the bottom as well. I'm not sure what type of ink or paint



they used to print the wordings and logos, but I wish they change it with a better and more adhesive one. There is a tendency that the ink/paint can be rubbed off. In this case, you can use the iDAC2 even without the wording at the bottom. But in the case of the micro iDSD and micro iCAN SE, you need those labels since both device have switches on them.



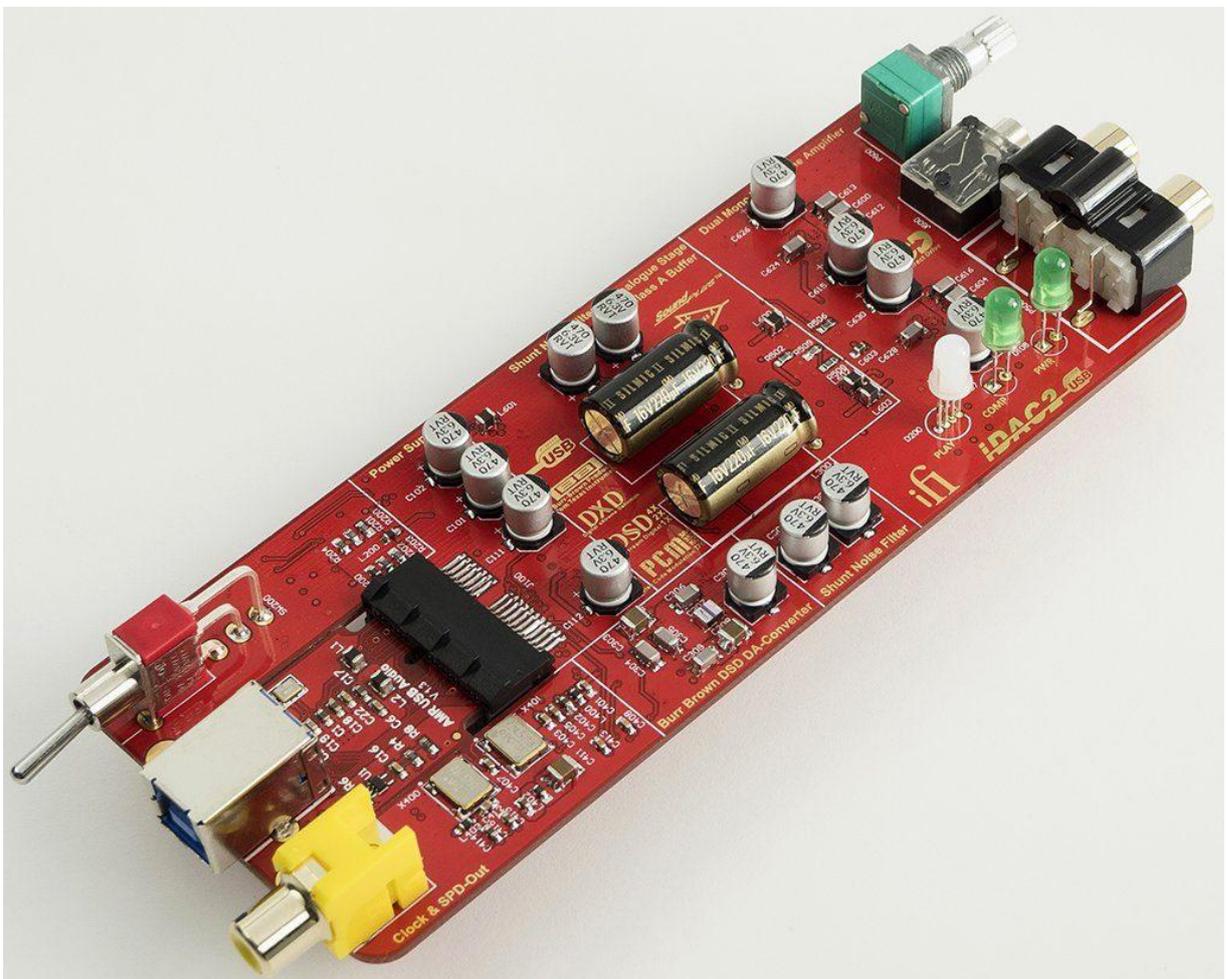
Here are more photos of the iFi micro iDAC2, this time from the sides. There's nothing on the sides of the iDAC2 except for its stylish engraved lines that gives you a better grip of the device.

At the front portion of the micro iDAC2, there's the RCA left and right output connector, the 3.5mm headphone connector and the volume knob. Personally, I find the 3.5mm headphone connector too close to the volume knob. Whenever I plug a headphone or IEM on that output port, it's a little bit annoying or difficult whenever I need to adjust the

volume knob and there's a 3.5mm plug partially blocking its way, specially if the 3.5mm plug is thick.

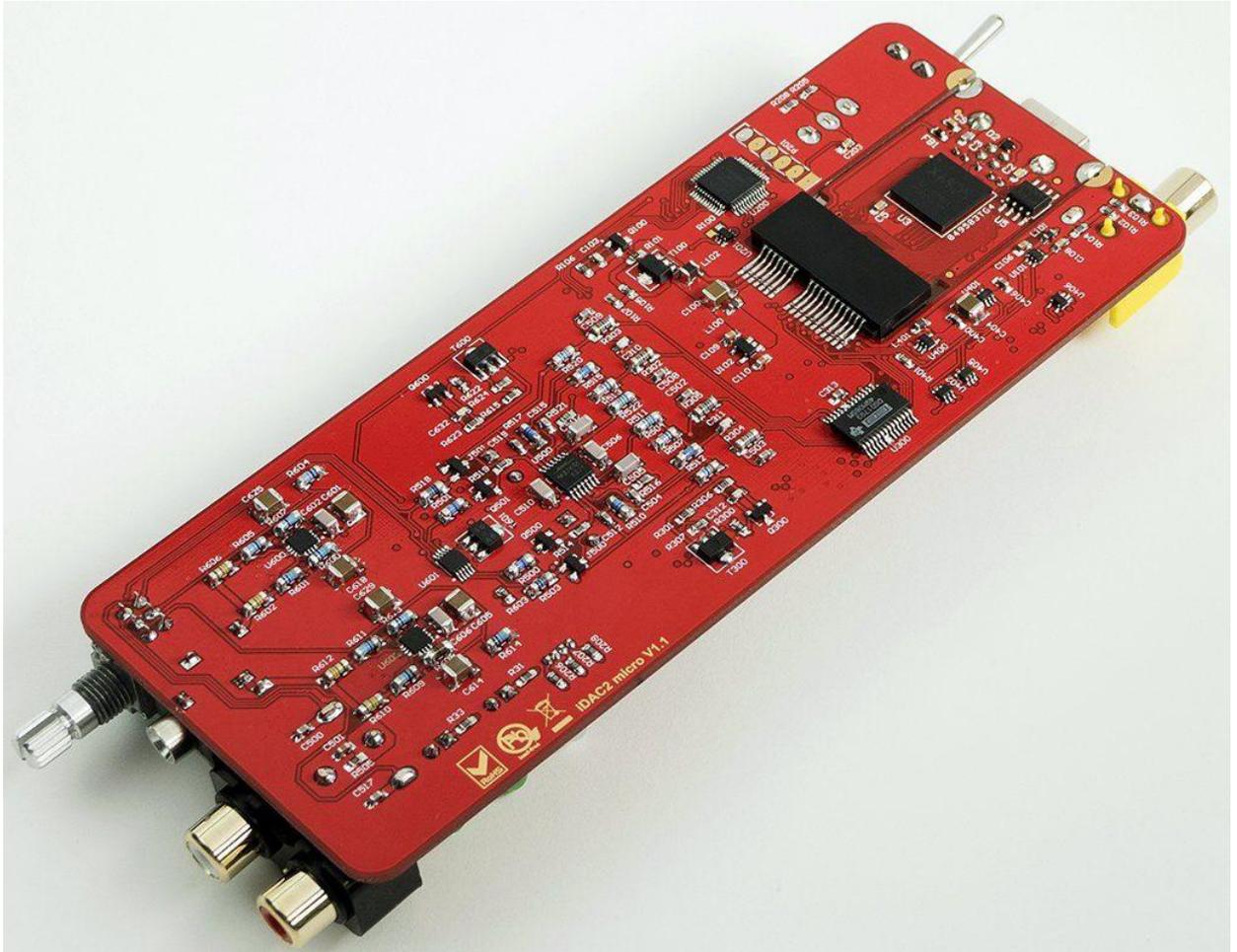


Meanwhile, at the back of the micro iDAC2 you can see the SPDIF or digital output, the USB 3.0 Type-B digital input and filter switch. iFi recommends for best sonics, with PCM music use Bit-Perfect and for DSD music use Extreme. However you also need to try the different



settings and see which you prefer. Most of the time, I just set it to Standard and leave it as it is.

Opening the micro iDAC2 requires some hexagonal screwdriver or hex key, and you also need to pull out the volume knob. Above you can see the components on the top portion of the iDAC2's PCB. The Elna Japan Silmic II is clearly visible on the middle of the PCB, together with the other capacitors and transistors. Two oscillators can be seen near the clock and SPD-out connector. Did you notice there are no chips on the top portion of the PCB? Well, let's flip it and see what's on the other side of the PCB.



At the bottom portion of the iDAC2's PCB you can see more of the components like the Burr-Brown DSD1793 DAC chip, XMOS USB chip and more. Notice that the USB digital input section is somewhat cut-out or separated from the main PCB. I think this is to ensure that the incoming signal stays clean and noise free.

By the way, if you are a Windows user, you do need to download the drivers from iFi Audio's site for the micro iDAC2 to work properly. For Apple MAC OSX and Linux users, no driver is needed since USB audio class 2 is supported natively.

## iFi micro iDAC2 Sound Quality (Subjective Listening)

This isn't my first experience with iFi Audio's products. I was using the [nano iDSD](#) before, followed by the micro iDSD that quickly became my favorite portable DAC/AMP. So it's no surprise to me if the micro iDAC2 sounded great. Honestly, I would be more surprised if it didn't sound good. But I am happy to tell you that it's a good portable DAC. Yeah, you didn't waste your time reading this review! The real question is, is the iDAC2 your cup of tea? Will it go well with your audio gear like your headphone, IEM or amplifier?

For several months I used the micro iDAC2 as my primary DAC for my PC. Sometimes I pair it with the micro iCAN SE, but most of the time I just listened to it right off from its front 3.5mm headphone out. One of the things that I like about the iDAC2 is that it's totally USB powered. I connected it to my [Gigabyte Z170X-Gaming 7](#)'s rear USB3.0 port, and after installing the "iFi (by AMR) HD USB Audio Driver 2.26" it's all set. I did try the USB3.1 port briefly, but I didn't notice any benefit of using it over the USB 3.0 port.

Now in terms of sound quality, to my ears the iFi micro iDAC2 has a very clean and clear output signal. I couldn't hear any distortion or static sound, even when playing different audio formats (PCM to DSD and vice versa) or when skipping time on a particular track.



Hissing sound was nonexistent at all especially when I used headphones. I tried IEMs as well, like the Campfire Andromeda you see above, and hiss was observable only when I turned the volume knob all the way to 85%-100%. Of course, I wasn't listening to any music at the time (with the Andromeda). As you can see from the photo above, the volume knob is only at 9 o'clock and that's already the comfortable listening volume with the Andromeda. As for headphones, depending on the impedance of the headphone, you need to crack the volume up more.

The iFi micro iDAC2 has a very neutral and natural tonality or sound signature. Audio fidelity is definitely top notch without losing quality or detail, and at the same time it doesn't add anything or slightly alter the sound signature of your headphone or IEM. There is no treble boost or bass boost with the iDAC2. If you have a bassy or warm-sounding headphone that you may want to give it more treble presence, the iDAC2 can't do it for you. Or if you have a sharp piercing and sibilant headphone or IEM that you want to tone down its treble and give it a little more bass presence, the iDAC2 can't do that either.

To my ears, the iDAC2 sounds like it is passing the original state of your audio, without adding or losing anything. If you have a lossless audio or your feeding DSD audio to the iDAC2 then that's what you get. Of course, if you feed it with a lossy MP3 audio, it can't make it sound any better at all. Better get the lossless version of that music if you don't want your ears to suffer. Sound staging and imaging are pretty good as well with the iDAC2. Just be sure you also have a headphone or IEM capable of delivering that amount of soundstage and imaging as well.

If I were to compare the micro iDAC2 with the micro iDSD, I would say that overall the micro iDSD is better compared to the iDAC2. When I was switching from the iDAC2 to micro iDSD while listening to Adele, I noticed that the mid-section of the micro iDSD has more body or probably a tad warmer compared to the iDAC2. Not to mention, the iDSD has a better amplification section and it does come with more connectivity options and feature such as XBass and 3D.

Now in terms of pairing headphones and IEMs, the micro iDAC2 is not that picky at all. No problems with IEMs since generally speaking IEMs are very easy to drive. However headphones are a different story. Headphones that are relatively easy to drive won't have any problems with the iDAC2. I tried it with the EL-8, Fidelio X2, [HE-400s](#) and HE-400i; the iDAC2 was able to drive these headphones with ease. But I don't think that the integrated amplifier of the iDAC2 is powerful enough to drive headphones with high impedance rating. Headphones like the Sennheiser HD800(s) with a nominal impedance of 300  $\Omega$ , you will have to pair the iDAC2 with an amplifier (like the micro iCAN SE) to drive these high impedance headphones to their full potential.

## Price and Availability

iFi Audio's iDAC2 USB powered / portable DAC with DSD support is now available in the US and UK. You can grab one via Amazon.com for \$349. While in UK, it currently retails for £295.00 and you can order one from [Amazon UK here](#). iFi Audio is offering a 1 year warranty for parts and labor for the said device.



## iFi micro iDac2 Review: Conclusion

iFi Audio has created another marvel in the form of the micro iDAC2. This is a great digital to analog converter that comes with a reference-like sound quality. Price is most of the time debatable, however you can't also deny that there are DACs that have a much higher price tag but performs more or less the same or (worst) subpar compared to the iDAC2. Some DACs doesn't even support DSD or anything above 384kHz. DSD formats are not as popular

yet compared to lossless PCM formats. Soon it will be and the iDAC2 is fully prepared for that.

With the iDAC2 you get what you feed it with. Throw a 16/44 kHz audio and that's what you get, throw a 24/96 or even a DSD256 and the iDAC2 won't complain at all. The sound quality and signature simply stays at its original form and you get the cleanest and purest signal. It's very neutral sounding and natural. Think of it this way, if the iDAC2 was a monitor or TV, the colors are not too saturated or washed out.

In terms of build quality, it is pretty much solid thanks to its aluminum metal casing. I really don't have any major issues with the iDAC2. If I have to nitpick, the 3.5mm headphone out could have been a little bit farther from the volume knob and the rubber feets could be a little bit thicker. Although its integrated amplifier is powerful enough to drive in ear monitors or most headphones on the market, I would like to reiterate that it may be or is inadequate to fully drive headphone with high impedance. Like I said earlier, better pair the iDAC2 with an amplifier like the micro iCAN SE if that's the case.

Overall, it was and until now is a really nice and enjoyable listening experience with the iDAC2. This is simply a no-nonsense product that is very easy to use and operate. If you want a neutral-sounding DAC without costing you too much, then the iFi micro iDAC2 should be on your top list.