

## **CH-Precision C1 DAC/Controller/Streamer - Review by Ran Perry**

I have been involved with computer audio for more than 10 years. Over these 10 years, I have seen audiophiles struggle to find the right technology and the optimal setup for their computers which were not designed for audio in the first place. Indeed, we often forget that no matter how hard we try, our computers and laptops were not designed to serve the common audiophile. Computers are noisy, bloated and require some knowledge to bring them to perform at above their default settings. The online community is filled with many comments about various operating systems, drivers, servers, scripts, etc., etc. The biggest issue with computer based audio is, well, the computer. Knowing that home computers were not design for the common audiophile, is there a way for us to still enjoy high quality sound from all our precious files?

Well, there are many. We can go and master an operating system and its various related applications. We may want to learn to write our own applications. We may even want to build our own drivers. But some of us are bound to prefer some plug'n play convenience from our gears. There are just too many solutions out there that stem from different philosophies and technologies (DAC, streamer, laptop, desktop, embedded.....etc.). While I don't think there is one single path that tops it all, some are inevitably more practical than the others.

### **Enters the C1 from CH Precision.**

This Swiss-made DAC offers quite a fresh perspective on computer audio. Its modular architecture allows the expansion of inputs and outputs (digital or analogue) as per the end user's needs. My review unit came with an USB input as well as an Ethernet input for DLNA / UPnP streaming. It also had a set of stereo balanced analogue inputs.

Other available options include a Clock Sync card, the X1 external power supply unit, and additional digital inputs.

The C1 in my book scores exceptionally well in many areas, from the unique and minimalistic design to the many practical settings available to the user. Here are some of my thoughts generated during the C1's one-month stay in my system...



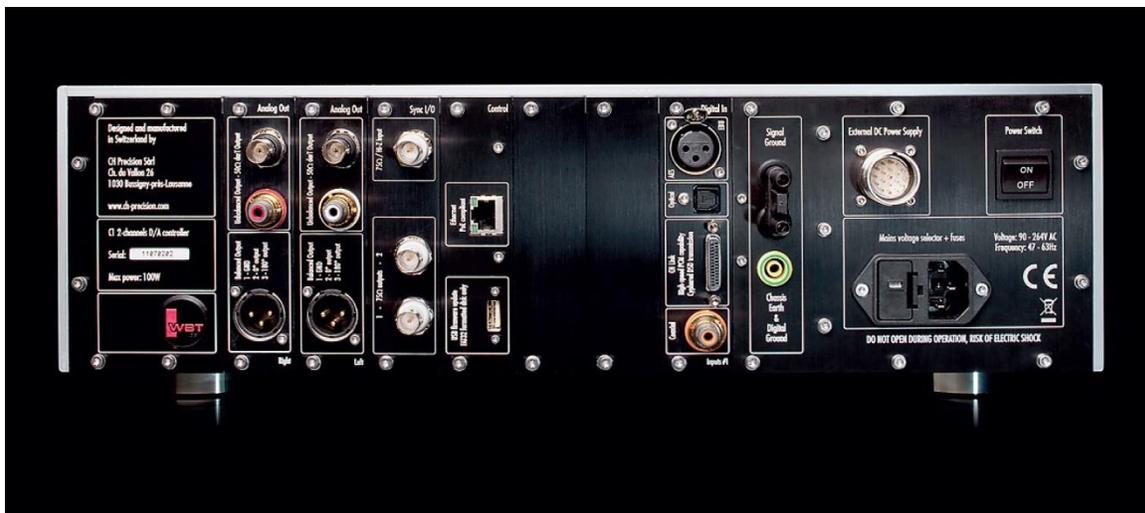
*The Beauty - C1's front panel*

## Features

The USB implementation in the C1 is fantastic. It's a USB Audio Class 2.0 (UAC 2.0). Any computer that supports this standard can use the C1 as a sound card without having to install additional drivers. Linux and Mac will support it while Microsoft's Windows doesn't; as a result, special drivers (provided by CH Precision) will be required. The CH limits the data rate on the USB interface to 24bit / 192 kHz. While the UAC 2.0 allows for a higher bandwidth, I had no files on hand to test it beyond 24/192. CH Precision has promised to add support for 32bit / 384 kHz in the near future. The latter probably looks better on paper but no one currently produces anything in 32bit, not to mention its

irrelevance for playback. In the realm of digital audio, bigger is not necessarily better.

My Ubuntu 15.04 operating system recognized the C1 as an external sound card without a hitch. Automatic switching from one sampling rate to another was smooth with clear indication on the front panel display as well as on the Android app (more on that later). The USB input card was installed by default in the C1. When playing files, the C1 would indicate the current sampling rate very clearly. For instance, I used the twin-dial knobs on the front panel to set the display to light up in green with PCM files, and purple when DSD signal is detected. Pretty cool! The inputs on the back panel of the C1 are clearly marked and are of the highest quality.



*The Beast - C1's back panel*

## Future Proofing

In this day and age of digital technologies, it's hard to stay current without resorting to replace your gear every now and then. The C1's modular architecture allows the user to add or change cards as per need and technological advancements.

By inserting an Analogue input card, and then changing the setting from "Converter" to "Controller", I managed to transform the C1 to a preamplifier driving my Pass Labs monoblocks directly. The switching is instantaneous and allows the user to operate its built-in volume control.

I used the C1 as a preamp for most of my listening sessions. Firmware updates are available periodically from the manufacturer. During my review period, I have only encountered one such update. The process was smooth, and lasted merely ten minutes. The front display would tell me the progress of the update.

## **DLNA / UPnP**

I believe this is THE killer feature of the C1.

While many audiophiles are still thinking in "Computer as Source" mode, the C1 eliminates the computer once and for all in the audio path. I used BubbleUPnP on my Nexus 9 tablet to stream music from my NAS to the C1. That's it. It's a NAS (storage) serving music files via DLNA / UPnP. The C1 has performed faultlessly, and remained responsive to my GB Ethernet. My UPnP server is a MinimServer installed on a Synology NAS. The C1 would identify itself as a "CH\_Precision\_Renderer-45", where 45 is the last filed in the C1's IP address. The IP assigned to the C1 was 192.168.1.45.

I streamed lossless music from Tidal, Qobuz, and my own NAS. The Ethernet port made it very convenient to handle all my digital music needs. It's the same interface for both internet streaming (Tidal, and Qobuz) and my NAS. I am curious whether CH will in the future support Meridian's MQA. Tidal will enable MQA later this year.

Some audiophiles may take it for granted, but elimination of laptop or PC in the audio path is a HUGE bonus! You can now say goodbye to the USB cables, dedicated servers, dedicated power supplies, dedicated DACs once and for all. These things were great in 2015, but this is 2016 already. And in 2016, streaming is my new friend!

The C1's display came to life the moment network streaming was used. Song title and artist were shown along with file type, sampling rate, and progress bar for the playing file. Nice!

The faceplate throughout the entire CH product line is dominated by a big, centered display. The actual display area turned out to be slightly smaller than the frame would otherwise suggest.

### **CH Android App**

CH provides an app that requires Android devices. Currently it's only available on the CH website. It allows the user to control any networked CH devices. I was able to set anything I wished in a most convenient fashion. The app also allows you to manage your network library, view cover art, and manage your play lists. It's very easy to use. Once the setup was complete, I used it solely for volume control and input selection. It will be useful to have such an app in Google's play store, and to have an iOS version as well.

### **Sonic Impressions**

The C1 is by far the BEST DAC and component I've ever experienced in my system. It has no "voice" at all. One of its most impressive attributes is the extremely low background noise. On excellent recordings, the instruments just pop up live without any hiss or anomalies. It is simply dead quiet! The C1 will take anything you throw at it. I listened to music hours after hours on it, and enjoyed every second of it. It allowed me to dig deeper into the nuances. It is oh-so-

quiet that instrumental texture became a delight. The C1 also excels in every other parameter you can think of: channel separation, dynamics, detail retrieval, and overall presentation. It was business as usual when used as a preamp with my Whest Three (phono stage) connected to my Micro Seiki DDX1000 turntable, or through the AES/EBU input with my Primare CD player. The C1 kept the same "sound" regardless of the input.

## **Summary**

The CH Precision C1 is a modern and modular dream-come-true DAC. It accepts analogue, USB, AES, S/PDIF and network inputs. It plays anything you throw at it with astonishing ease and clarity. With the C1, CH Precision has allowed the highest quality sound to emerge from my collection of files without the need for a computer, drivers, cables, and interfaces. They have successfully removed the actual computer from the computer audio equation. I can play all my files, PCM and DSD alike, get cover art and artist info. The C1 is simply the MOST practical audio gear I've ever used. Everything about its operation makes common sense. From its superb build quality to its out-of-the-world performance, the C1 is simply peerless. It is something you need to experience for yourself!

## **Equipment**

Boulder 810 Preamplifier / Primare CD32 – CD Player / Micro Seiki DDX-1000 Turntable / Micro Seiki CF2 Arm / Benz Micro Cartridge / Whest Three Phono Stage / Pass Labs X260.5 Monoblocks / Nexus 9 & 5 / BubbleuPnP / Synology 1513+ NAS / Elac FS 409 Speakers