

## **Discrete Precision Resistor R-2R Ladder DAC**

**Date Added: 10/02/2017 by Art Ross**

[Echo's End DAC, maxed out with 45 onboard Firewall modules.]

IN THE MIDST OF UPGRADING TO LESSLOSS DFPC CABLES, THE 5X FIREWALLS, THE USB FIREWALL KEYS, I RECEIVED NOTICE OF A NEW PRODUCT FROM LESSLOSS. IT WAS A LADDER DAC: ECHO'S END. WITH THEIR RECORD OF SUCCESS WITH ME, AND THE 30-DAY RIGHT OF RETURN, I HAD TO "GIVE IT A SHOT."

I HAVE HAD SOME MARVELOUS DACS IN MY SYSTEM IN RECENT YEARS. IN RETROSPECT, HAVING EXPERIENCED THE ECHO'S END, I CAN HONESTLY SAY THAT ALTHOUGH THEIR SOUND WAS VERY CONVINCING, THERE WAS A NATURALNESS, A YOU ARE REALLY THERE OPENNESS QUALITY TO THE ECHO'S END THAT NONE OF THE OTHERS OFFERED. OF COURSE I WOULDN'T HAVE KNOWN THIS IF I HADN'T EXPERIENCED THE ECHO'S END. IT IS NOT THAT THIS DAC WILL HIT YOU ON YOUR HEAD. IT IS MORE SUBTLE THAN THAT. IT IS MORE LIKE BEING IN THE LOBBY OF THE HALL WHERE THE ORCHESTRA IS PERFORMING, AND YOU OPEN THE DOOR AND ENTER THE AUDITORIUM. YOU ARE SUDDENLY ENVELOPED BY THE SOUND OF THE PERFORMANCE. TRULY, IT IS THAT CONVINCING. I AM CERTAIN WE ALL HAVE EXPERIENCED THIS LAST EXAMPLE SO I BELIEVE YOU CAN UNDERSTAND THE DIFFICULTY IN FINDING THE RIGHT WORDS TO DESCRIBE THE EXPERIENCE. THAT IS MY TAKE ON THE ECHO'S END. IT IS EASILY BECOMING A GOOD FRIEND!

**Date Added: 10/13/2016 by Andrew Dove**

Happy Birthday!

With my 50th birthday present from my kind wife Jane arriving in early August, but my birthday not being until 26th September, I waited patiently and did not even sneak a peak at the Echo's End.

The new DAC replaces a Musical Fidelity Tri Vista which has served me well over the years. The source starts with Tidal through an iPhone 6, Wadia 170i with Audiocom level 3 mods and a Teddy Pardo power supply.

I am well aware from owning LessLoss power cords that the sound benefits substantially from a long burn in. However, I had waited long enough.

On first connecting the Echo's End, I could immediately hear greater breadth, detail, separation and rhythm although with an evident harshness to the sound. Within an hour of listening the harshness had largely disappeared. With a further week of 24/7 burn in the sound can only be described as being incredibly musical. Particular highlights for me have been the dramatic reduction in sibilance, the musicality at every level and the way in which it draws listeners in. Everything becomes more distinct. Instruments and voices are separated from each other. The layers in the music are unravelled.

Also worthy of mention is that the wood case is aesthetically very pleasing. I now have a box of electronics to visually match my Sonus Faber Electa Amator speakers. Finally, it may come as a surprise to some, but lower quality source material such as BBC iplayer radio is now pleasing to listen to. OK, I am not getting the full experience described above with the iplayer, but the Echo's End makes a huge difference in quality, removing most of the harshness.

The bottom line is that there has been a steep change in our musical enjoyment since the Echo's End arrived. Jane even called me at work one day to ask me how to turn the HiFi on!

Thank you Jane and thank you Louis.

**Date Added: 09/13/2016 by Arthur Ross, Orlando Evans, Bob Grossman, Ken Sternberg, Bill Melillo**

We visited several audiophiles in the Philadelphia and New England area. Here they are expressing their impressions using LessLoss products.

**Date Added: 09/08/2016 by Victor Sierra, The Philippines**

Echo's End. It started when I was in need for a Dac to be used for our audio show here in p.i as most my Dacs are custom made. But I have others like Audio Note Dac and a highly modified Thor Dac. These Dacs are better when A/B with current Accuphase Dac. I stumbled upon LessLoss and upon talking to Louis this Dac seemed to make sense. So I closed my eyes and took the leap. Arrived perfectly packed and with a bulletproof case. I was worried that I'd be dissapointed as with most Dacs I've tried. Especially a non tube Dac. Well, when I switched to the Echo's End fresh (no burn-in at all), I knew this was special. Just had a naturalness and right tone that most I've heard couldn't get right. I'm not good with words but all I can say is that it sounds real, organic and relaxed. I have the Ale compression drivers on lecleach horns which are 110dB and these horns are very unforgiving with mechanical sounding Dacs. You must have top of the line front end. The Echo's just threw music after music with believability I haven't heard from most Dacs on the market.

Till now I haven't had the itch to take it out of my system.

Just good stuff!

Best,

Victor Sierra

**Date Added: 08/13/2016 by Arthur Ross**

When that "Little Wooden Jewel" arrived it immediately went into burn-in, 24/7. Finally, after some 3 weeks my good friend, also a hi fi connoisseur with a self-taught electronics background, came over for the unveiling. The amp was already powered-up, a piece of jazz was selected, I pressed the start button, and there flowed forth an absolutely breathtaking 10 seconds of heaven! We both inhaled deeply at the same instant as if startled.

Let me see if I can communicate this better. Let's say that you are attending a full orchestral concert. You have ideal seating. Before the concert begins, you get up to answer nature's call. Upon returning, the concert has begun. As you enter the auditorium you are immediately enveloped in the full alive acoustical environment. This instant immersion is not something one generally experiences with an audio system. That is the precise experience my friend and I experienced. We experienced absolutely no impediment or restriction to the flow of the music. In my imagination I visualized the flow of music coming down the wires totally free of any impediment. There was a sense of openness, clarity, cohesiveness of the entire assemblage of the musicians. The dynamics seemed unlimited.

As we continued our initial listening session with different kinds of music we were continually impressed with the naturalness of the sound with no limitation on our sense of space or volume. I feel that the speed of reproduction of musical attacks where speed is a component of the realness of the live presentation, our intuition accepts this as live. Add to that the absolute "blackness" of the surrounding space, the performance is almost three dimensional. It is amazing how the naturalness of the presentation engenders a relaxed state of mind in the listener.

The balance of the musical spectrum presented is remarkably natural. Nothing beyond the music commands your attention. Focusing on the music as a means of communication, the ease and naturalness of the performance can move you in ways you may not have experienced before.

Listening to voice is an interesting experience. We all have experienced sibilants which we automatically find annoying. However, with the Echo's End, sibilants that were in the recording came through so naturally that it rarely distracted the listener. This is not to say that the Echo's End presents the playback as soft or sweet or unbalanced. On the contrary, its presentation is as fast and accurate, and dynamic as "live." The presentation of the voice clearly involves all parts of the singer's anatomy that is involved in creating the sound. So convincing is it that frequently listeners sense the performer may be looking their way and immediately shy smiles breakout across their face.

I guess I have to mention the extended range of the musical spectrum. Deep and driving bass was crisp, sharp, and dynamic and clearly presented without any sense of "mushiness." If the music, and conductor calls for it, it can

blow you out of your chair. The extended upper register comes across as smooth and liquid as one could want. What is so wonderful about the range of Echo's End's presentation is how balanced it is as the music flows across it's entire spectrum. There will be no "screwing-up the face" in anticipation of unpleasant hard high register attacks.

The piano notes struck appeared with an amazing speed and power. One could not ignore the obvious speed and expanded dynamics of each chorus of instruments and each note or string of notes struck on the piano. The subtlety of the percussion from the rear of the stage though playing at the same time as the other instruments had no difficulty making itself heard in surprising detail. Here is an interesting observation: sibilants from male or female voices on all prior DACs formerly in my system could be annoying.

But with the ECHO'S END in place, the sibilants were there, but natural, open and unfocused, and no longer annoying. Deep bass was crisp and driving without a trace of looseness or excessive rumble. Also, there was an amazing balance between the full upper audio range with the full lower range. No preference was evident in the middle range. Another accurate description of the sound is relaxing and so natural and non-tiring.

I believe you may want to know the kind of DAC this "Little Wooden Jewel" replaced. It was a Swiss made \$24,000 truly wonderful DAC that did not have the overall "magic" of the Echo's End. I have enjoyed it for the past 7 months. It will shortly be offered for sale.

I'm sorry this has taken too long to compose and likely too long to read. But my Echo's End awaits and I must return.

Arthur Ross  
Westport, CT, USA

#### **Date Added: 07/24/2016 by Joseph L G, Los Angeles**

Today I unlatched the shipping case and had my first listen to the Echo's End. I linked it to my computer sound card with an AES/EBU connector and to my tube amplifier with balanced interconnects. Even without any break-in I was immediately impressed with the quality of the sound. It is a significant upgrade to my system.

I am using the Echo's End to convert Hauptwerk pipe organ digital samples in my computer to analogue signals for stereo system playback. I control the Hauptwerk program real time by MIDI from a digital pipe organ console. With the Echo's End the pipe organ reverb tails are smooth and fully developed, more accurate and precise than with my previous DAC. In my system the Echo's End is able to adeptly deal with complex combinations of pipes with clarity, weight and authority. Even when playing full chords and intricate passages with all stops engaged the sound is clean, articulate and controlled. With the Echo's End it is easier to distinguish wood pipes from metal pipes and discern their unique voicings. The entire frequency range of the organ is presented beautifully without any perceived bumps or dips or unnatural colorations. I am particularly impressed with the purity of the deep bass of the pedal notes. Not only are the fundamental tones well expressed, but also the associated harmonics and subtle nuances of moving air -- the things you feel as well as hear. Overall, compared to my previous DAC (which had a Stereophile "highest recommendation"), I find the sound of the Echo's End to be more realistic, more engaging, and tonally and spatially more revealing.

The Echo's End has exceeded my expectations. I could not be happier with the results. Thank you for developing and making available this product.

Joseph L G, Los Angeles

#### **Date Added: 05/20/2016 by Tony-Oz**

Echo's End DAC: Follow-up Impressions

With well over 300 hours of play, my Echo's End DAC should be close to full burn-in. Here are my humble impressions following my earlier report which I must stress are purely personal. I have deliberately chosen a range of recordings that range from audiophile-grade recordings to those with known deficiencies.

There was very little difference between the Response Audio Tube CD player and an Oppo BDP-95 Blue-Ray player as sources connected to a Response Audio 801A integrated Tube Amp (70W/Ch) using an Aural Harmony gold-alloy coaxial cable. The system uses LessLoss Signature power cables with Firewall Current Conditioners to every component.

The first thing that comes through is the "naturalness" and musicality of the sound, with little or no coloration, a dark silent background, excellent spatial delineation of voices and instruments with greater depth and height. There is no harshness with good recordings whilst older recordings known to be harsh or bright are given a new lease of life. This is indeed a major benefit as it has brought greater enjoyment to many old definitive recordings such as Klemperer's Beethoven Symphonies 3, 5 and 9, and Rossini's "Thieving Magpie" overture (the remastered audiophile CD by JVC from the original Decca recording) with Gamba and the LSO, is simply magnificent. Bach's Toccata & Fugue in G-Minor for organ (Peter Hurford/Decca) highlights the character of the bass, which is well rounded but solid and natural without any boominess. I can listen for hours with no listening fatigue.

The female voice is especially enhanced with greater clarity and a natural sibilance - this was quite obvious from certain tracks such as Eva Cassidy's "Over The Rainbow" where the brittleness at the top end when her voice reaches a crescendo now sounds controlled and natural. Diana Krall's voice comes across with even greater detail (try "The Girl In The Other Room" - tracks 3 & on 9, the controlled distortion of the electric guitar sounds "live"). Leontyne Price's "Oh Holy Night" is exhilarating and operatic recordings generally sound more stage-like with excellent spatial separation of voices from the orchestra.

Musical instruments sound much more dynamic and life-like especially the piano, violin, percussion and saxophone, yet remaining natural. Examples are Kyung Wha-Chung's Beethoven & Mendelssohn Violin concertos, Wilhelm Kempff's superlative Beethoven Piano Concerto No 5 (DG 1962 remastered) and Alfred Brendel's rendition of Schubert's "Wanderer Fantasie". Orchestral string music is lush and pleasing to the ear (try Rossini's String Sonatas (Decca). A favourite version of Pachelbel's Canon on a cheap Erato CD by Orchestre De Chambre/Paillard) has been transformed from a bright, harsh piece to a much more enjoyable experience.

However, I have noticed that the output, as judged by the audible volume of the music, appears to be reduced by about 15-20% in my system.

In summary, the Echo's End DAC has indeed transformed my modest audio system immeasurably, resulting in enhanced enjoyment of music and bringing new life to older recordings, which is what it's all about.

Top marks to you, Louis, for creating yet another great audio component. Love it.

*Update: 09/12/2016 by Tony-Oz*

#### **Echo's End DAC Update & 5X Firewall Module.**

The DAC is truly burned-in and has since been further enhanced with the addition of the 5X Firewall module to the integrated amp and a standard Firewall Module to the CD player used as a transport. All components are powered by LessLoss Signature power cables and the IC used is the Homage to Time. Since my last review, the sound volume output appears to have returned to original levels.

The addition of the 5X Firewall module has brought about an unexpectedly large boost in performance - much greater than using just the standard module - separation of instruments and voices is not only startling but the background is really dark. Music sounds fluid and natural while voices have slightly more clarity. Bass is more 'musical' and the high frequencies are relaxed and well-defined. The high registers of the piano sound like crystal - a great example is Liszt's "La Campanella" (Yundi Li - A portrait). The virtual absence of listening fatigue is greatly appreciated. Some audiophile friends have been similarly impressed when these components were tested on one of their systems.

I have also had the experience of using the LessLoss USB firewall module which has lifted sound from USB sources to a new level.

I have found that upgrading a decent system with super components from LessLoss like power and IC cables, the DAC and firewall modules have brought about greater sonic improvement than rushing out to buy the latest models of system equipment every year or so?..?

Thank you Louis for producing products that live up to their claims of excellence. As they say, the proof is in the pudding.

**Date Added: 04/23/2016 by Jörg Stanislawski**

The case for the Echo's End DAC is unbelievably sturdy and there will surely be not a single unit delivered damaged.

I placed the DAC on three Roller Block Jr., and it looks fine.

The look of the Echo's End DAC will not appeal to every possible customer looking for a new DAC. Well, I love it's look immensely. Stripped to the bones, a design of total understatement. No shiny display that shows sampling rates, input selector, the time and date or whatever. Just signal in, processing, signal out.

My Echo's End gets the input signal via AES/EBU from my CD Transport. Signal out via LessLoss RCA cable.

I listened to one or two CDs and let it play silently for hours every day. Then it came to my attention that I didn't check the polarity of the power connection, how could I forget that? Damn. And it turned out I had to switch the polarity. My advice to every customer, check it right from the start, as it is important. After several hours of silent burn in, I started listening.

Every comment LessLoss posted about the sound is absolutely right. It seems that the enclosure of the Echo's End is equivalent to the sound it creates in my listening room. It is pure, natural, analog-like and wonderfully detailed.

As if it were made explicitly for music with acoustical instruments. Jazz Trios sound unbelievably realistic. You can also expect lots of details not heard before. But I can only compare it to the DAC that I used before, and that was not an ultra expensive megabuck item.

With the Echo's End the sound, room placement of instruments somehow shifted in dimensionality, this is difficult to describe. The instruments are perceived to be at slightly different places, especially in depth. So, the music seems to be reproduced like it was intended by the musicians, producers and recording artists.

Even when this dimensionality / room was created artificially in a sound recording studio for your listening pleasure. Instruments are wonderfully separated and at the same time the music can be sensed as a complete whole. This differentiates this DAC from other DACs, which have a more technical or, haha.. "digital" sound.

I'll compare this to an analog example. Way back when, I purchased a used double LP of Dave Brubeck's Time Out at a record fair. It was an RCA pressing, nothing special. At a later date I got the first audiophile remastered 180gr. pressing. The re-mastered version couldn't compare to the cheap RCA pressing. The audiophile one had this sort of ping pong stereo effect, a much better separation of instruments, but the music couldn't be recognized as whole.

I only wanted to mention one CD, the OST of „the house of flying daggers“. This is a recording that gives you a feeling at first listen, that it can't get any better than this. The third track really gets you drumming, like the Kodo drummer of Japan, you know what I mean. With the Echo's End, this track gets an unbelievable complete new quality. The drums sound so real, that you sit there in awe and simply can't believe it. The drummers are in your room, it feels as if you can smell the sweat pouring down their skin. Really absolutely outstanding.

Yet again, LessLoss has created a wonderful product.

Thank You.

Jörg Stanislawski

**Date Added: 03/07/2016 by Tony-in-Oz**

## FIRST IMPRESSIONS.

After an impatient wait of 3 months, I have finally got the Echo's End DAC in my hands. I believe I'm one of the first to receive it.

Right out of the super space-age case the sound was compressed and heavy as would be expected but after only a few hours of play, it started to open up. Louis has indicated to me that it would take a good 3 to 4 weeks of continuous play for the DAC to be fully burnrd-in. Now, after only about 32 hours of play over a few days, I am already impressed with the uncluttered, clean, balanced and natural sound with little hint of colouring or noise. What I find most impressive is the marked reduction of excessive sibilance from certain "bright" recordings, the relaxed yet natural character of the bass , deep and wide sound field with a dark silent background despite the early days. However, there is still a detectable but minor degree of "heaviness" and a little brittleness in the the top end which, I am confident, will be resolved when fully burned-in. There is still a long way to go before the full potential is realised and I anticipate much more significant improvement in the weeks to come, like the other LessLoss products already in use in my system. Experience with products like the use of V-Caps in audio components suggests a full burn-in period of 400-600 hours is on the cards.

I was already very happy with my system before I had the LessLoss Firewall Modules and LessLoss DFPC Signature Power Cables installed on every component in both of my modest systems and was initially surprised how much they had contributed to the significant improvement to the sound. One of my audiophile friends was so impressed by them when we tested them on his system that he has since purchased them.

I'm no tech expert but fortunate to possess a musical background, having played the violin and piano, listening to classical music since early childhood and having enjoyed the fabulous concerts and operas during the many years living in London. This has helped in discerning between "true live natural sound" and "electronic sound". For me the ENJOYMENT and APPRECIATION of good music is the prime objective, not the hype of owning the most expensive audio equipment to brag about.

I could not be more impressed with the professional manner and prompt service in which Louis runs LessLoss - always ready to answer any queries in an honest manner without the air of aloof arrogance we sometimes encounter with some so-called "experts". Thank you Louis.