

Persistent Belief in Qualitative Sonic Differences Among DACs Without Objective Auditory Detection

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The ongoing debate over whether high-end digital-to-analog converters (DACs) provide audible improvements over professional-grade, moderately priced DACs remains a contentious topic within both audiophile and professional audio communities. This study examines claims of perceived sonic differences between DACs by conducting a blind listening test utilizing a loopback methodology. A music recording was played through a moderately priced DAC (TC Electronic BMC-2) and rerecorded (using a MOTU 24Ai) to create a loopback signal. Participants (N = 1,367) attempted to detect differences between the original and loopback signals via the YouTube platform. Statistical analysis of responses found no evidence that listeners could reliably distinguish between the original recording and its loopback version ($p < 10^{-9}$).

In contrast, an analysis of over 1000 YouTube comments using a large language model (LLM) revealed that 54.4% of commenters on the same video believed DACs exhibit unique sonic characteristics, often attributing differences to factors such as the analog output stage, power supply design, and implementation details. Many comments exhibited patterns of informational social influence, suggesting a reinforcement of beliefs independent of empirical verification. The results highlight a disconnect between objective listening test data and subjective listener perceptions, likely driven by marketing influences, cognitive biases, and group dynamics. This study reinforces the conclusion that well-engineered DACs achieve transparency in single-generation listening scenarios, with no demonstrable auditory benefit from higher-priced alternatives.

Keywords: Digital-to-Analogue-Convertors, blind test, audiophile beliefs

1. Introduction

While both audiophiles and audio engineers engage in extensive listening, their respective perspectives and priorities differ significantly. Audiophiles have historically favored high-end, aesthetically refined hi-fi equipment, often selecting components that complement their listening environment and personal enjoyment. In contrast, audio engineers prioritize sonic accuracy, seeking an uncolored and objective representation of sound, with little regard

for the visual appeal of their equipment. For the audio engineer, considerations such as acoustical design, room treatment, and monitoring accuracy take precedence over luxury materials or aesthetic embellishments.

In professional recording environments, music is captured using well-worn, sometimes decades-old microphones, routed through extensive runs of bulk copper wiring, and patched over aging B-type jacks, a relic of the telephone exchange industry. Despite the ostensibly crude interconnectivity when judged

with the yardstick of the audiophile, these environments are meticulously optimized for sonic accuracy. Meanwhile, in the audiophile community, substantial investments are often made in boutique power cables, “audiophile fuses”, high end speaker cables marked with arrows indicating the manufacturer’s recommended “orientation” for connecting the wire, as well as “audiophile grade” digital cables such as ethernet and USB types.

Although typically absent in the studios used to produce the original recording, these products are routinely claimed to enable the listener to attain a higher fidelity reproduction of the music, despite the absence of empirical validation and their seeming irrelevance to sonic performance from a technical standpoint.

On the other hand, certain components within a playback system are undeniably critical to sound reproduction quality. However, advancements in modern technology have rendered their performance effectively transparent in operation. Digital-to-analog converters (DACs) exemplify this duality—while they play a crucial role in the audio chain, well-designed DACs typically achieve a level of transparency where their contribution to perceived sound quality becomes entirely negligible.

Despite often listening in untreated domestic environments—where significant time and frequency-domain distortions can severely compromise auditory perception—many audiophiles assert an ability to discern subtle sonic differences between both categories of components; those that are typically considered functionally irrelevant and those which are considered functionally transparent.

Such claims have historically been dismissed by professionals. However, in contemporary times—perhaps accelerated by the influence of internet forums and social media-driven marketing—there appears to be a gradual convergence, or at least cross-pollination, between the two domains. As a result, audiophiles are increasingly incorporating professional audio equipment and ideas into their playback systems, while some professionals are, in turn, adopting the sentiments and marketing-lead beliefs of the audiophile community, and in some areas it is not obvious whether there exists any meaningful distinction between audiophile and professional domains at all.

One such example is the perception of sonic differences between DACs. Specifically, the claim

that DACs exhibit distinct sound characteristics—despite a lack of technically quantifiable variance. This belief is often accompanied by the use of vague subjective and creative descriptors, such as *better sounding*, *revealing*, *more 3D*, *superior sound stage*, to characterize the perceived sonic qualities of different models.

In the world of the audiophile, the primary concern is typically the DAC in isolation, with minimal consideration given to the ADC or successive generations of conversion. Aside from the digitization of analog media—a niche interest among some audiophiles—the primary focus remains on music playback rather than recording. In this context, since multiple generations of conversion are not a factor, the fidelity requirements for a high-fidelity (HiFi) DAC may, ironically, be less stringent than those for studio-grade converters, which must maintain absolute fidelity across multiple processing stages.

In a market focused solely on listening enjoyment, it is not only plausible but perhaps even desirable for a DAC to prioritize a subjectively pleasing sound over strict technical transparency. In cases where deliberate equalization or harmonic coloration is intentionally incorporated into the design of a DAC, audible tonal differences should indeed be perceptible to listeners. However, such DACs fall outside the scope of this inquiry, as they are functionally equivalent to a transparent DAC paired with an external equalization or saturation device. The concern is specifically around the transparency of the conversion process itself.

This study has the following aims:

1. Test whether professional quality DACs are transparent
2. Examine claims of purported subjective sonic differences
3. Investigate whether a causal relationship exists between 1. and 2. If such a relationship is implausible, explore potential cognitive, psychological, and sociocultural factors that may contribute to these perceptions.

2. Methods

Intuitively, testing for perceptual differences between DACs could involve a blind comparison of two or more devices. However, in this inquiry,

"transparency" refers to absolute fidelity—where the reproduced signal is perceptually indistinguishable from the original. Thus, comparing different DAC models is superfluous or misunderstands the task. If the claim is "professional-grade DACs are transparent," then invalidating it would require merely some kind of ability to detect *any kind* of difference in sound quality *at all* between an original recording and a recording passed through a professional-grade DAC.

2.1 The loopback test

Although the original digital recording reference cannot be heard directly without a DAC, a well-established, straightforward, yet effective test often used to assess transparency of converters is the loopback test. This test involves connecting the output of a DAC to the input of an analog-to-digital converter (ADC) and recording the resulting signal. The process of passing audio through this loop once constitutes a single generation of the test. This procedure can be repeated for an arbitrary number of additional generations, allowing for a cumulative assessment of signal degradation.

With modern, high-quality DACs and ADCs, little to no perceptible difference should be present between the original signal and the first-generation loopback recording. Likewise, the first-generation loopback should exhibit no meaningful deviation when compared to the second-generation recording. However, as the number of generations increases, signal degradation accumulates. By the time the original is compared to the 100th generation, audible differences tend to become sufficiently pronounced that even an untrained listener can detect them.

The loopback test thus serves as a benchmark for quantifying the transparency of a DAC. However, because the ADC also plays a critical role in the process, the accuracy of the DAC assessment is inherently limited by the quality of the ADC. In an ideal scenario, a perfect ADC would enable an independent evaluation of the DAC's transparency. However, as no ADC is entirely free of imperfections, some degree of uncertainty is introduced by its presence in the loop. Consequently, the loopback test cannot establish an absolute measure of a DAC's transparency but can instead provide a quantification of how transparent it is, *at a minimum*. This can be expressed in terms

of the number of generations required to produce a discernible difference.

This metric provides a useful approximation of the transparency of DACs and ADCs, particularly for applications requiring the highest fidelity in audio conversion. It is especially relevant in professional settings such as recording studios that utilize analog consoles and mastering studios incorporating analog processing chains, where audio may undergo multiple generations of conversion. In such contexts, state-of-the-art transparent conversion is highly desirable. The closer a system approaches this ideal—measured by the largest number of generations required to produce a perceptible divergence from the original signal—the more suitable it is for quality-critical audio processing.

In modern professional audio environments, where signals may undergo multiple stages of conversion, a professional DAC must not only exhibit transparency in the first generation but must also maintain absolute transparency across successive generations. This requires the minimization of cumulative effects such as harmonic distortion, frequency response deviations, transient degradation, and other digital audio artifacts. Consequently, professional-grade DACs must achieve a level of transparency that far exceeds the threshold at which any audible deviation from the original signal becomes perceptible. By definition, if a DAC introduces audible coloration in the first generation, it fundamentally fails the prerequisite of ensuring transparency across multiple generations, which is essential for high-fidelity professional audio applications.

Consequently, if a claim is made that a professional audio DAC exhibits distinct sonic characteristics, sound signatures, or audible tonal differences at the first generation, then it is *a priori necessary* that one of the following is true:

1. Listener error: The perception of such differences is erroneous and no actual audible variation exists.
2. Device error: A DAC being compared is not professional grade, is defective or current technology is insufficiently advanced to achieved sonic transparency

The simple loopback test is able to reveal which is the case. As each generation results in incremental degradation of the audio quality, the listener must simply possess the ability to detect any such

degradation. Such detection need not have a particularly high bar. Merely detecting *anything at all* corresponding to a potential sound characteristic of a professional grade DAC would be sufficient to invalidate its attribution of transparency.

2.2 Sensory evaluation

The usual gold standard, the ABX test, may not be the correct choice for the specific task at hand. It places various challenges in front of the listener with memorization and specific identification of sound which is superfluous for the task of merely detecting *any difference at all*; the lowest bar conceivable necessary to begin establishing the claim that DACs have distinguishing sound qualities.

Consequently, the most suitable test considered for this purpose was not any kind of A/B comparison where the different examples were labeled or prompted, but rather, a continuous recording where the original and one-generation loopback versions were switched back and forth at secret intervals. If the listener was able to detect *any difference at all* then they could at least hear roughly where any such the differences occur, without the need for additional explanation of those differences, and simply count how many such differences occurred during the audio example.

An arbitrary piece of music was selected for this purpose and a loopback test was performed using the following chain:

Apple Mac mini M4 (REAPER) → MOTU 24Ai → ADAT optical out → TC Electronic BMC2 (optical in) → analogue XLR out → Unbalanced minijack patchpay (solder lug) → patch cable → Unbalanced minijack patchpay (input jack) → solder lug → MOTU 24Ai (Dsub) → USB → Apple Mac mini M4 (REAPER)

None of the equipment used for this test was particularly expensive. The TC Electronic BMC2 is a mid-tier studio monitor controller first released in 2009—over 15 years before this study—and is powered by a low-cost external switching power adapter, colloquially known as a 'wall-wart'. The analogue signal path was entirely unbalanced (XLR pin 3 from the BMC2 tied to ground), and the patchbay was a repurposed Doepfer Eurorack multiples module (A-180-1). By audiophile standards, such interconnectivity might be considered indecently lo-fi. Consequently, the test setup could be considered overly generous in facilitating the detection of switching events. If no detection is possible under these conditions, then a

more expensive and refined setup—offering higher audio fidelity—would, by definition, make auditory detection even less plausible.

The loopback version was then spliced together with the original music such that it alternated in the following order:

Original → Loopback → Original → Loopback → Original → Loopback → Original → Loopback

Resultantly, there were seven “switches” in total.

If different high-quality DACs truly had distinct sonic signatures—describable with creative adjectives or even simply deemed to “sound better”—then identifying these switches between the original and loopback audio should be possible, perhaps with an accuracy of ± 1 , or even ± 2 . Failure to do so would provide strong grounds to reject the claim that such audible differences exist. Or perhaps this study will instead lead to a sudden surge in the second-hand market value of BMC2 units, as the overlooked and since discontinued pinnacle of transparent audio excellence—though this alternative seems intuitively to lie on the wrong side of Occam’s razor.

2.3 Procedure

A YouTube video was produced featuring a discussion on digital-to-analog conversion semiconductor chips commonly used in commercial DACs. It highlighted how, in many cases, these chips cost a disproportionally small amount relative to the retail price of the units they are housed in, and that such mass produced chips constitute the majority of the conversion process. The video then explained the concept of transparency and loopback tests with examples, before finally presenting the blind test from the first-generation loopback study. Multiple calls to action encouraged viewers to click the link to the poll and cast a vote regarding their perception of the blind test.

During playback of the blind test audio, there was no visual change on-screen. Against a black background was written in white text:

How many cuts are there?

A cut is any time I switch from A to B or B to A

[link to wav file in description](#)

The video attracted substantial interest and within less than 48 hours already amassed over 53,000 views and over 1,300 comments.

In the description of the video, as well as in a pinned comment, users could find the link to the poll to vote and a link to the uncompressed wav file, to listen without any loss of resolution resulting from audio compression applied by YouTube.

The poll took the form of a single multiple choice question:

How many times did I cut during the blind test?

- I didn't hear any cuts or I am not sure enough to guess
- Just once
- 2 times
- 3 times
- 4 times
- 5 times
- 6 times
- 7 times
- 8 times
- 9 times
- 10 times
- 11 times
- 12 times
- 13 times
- 14 times
- 15 times
- 16 times
- 17 times
- 18 times
- 19 times
- 20 times

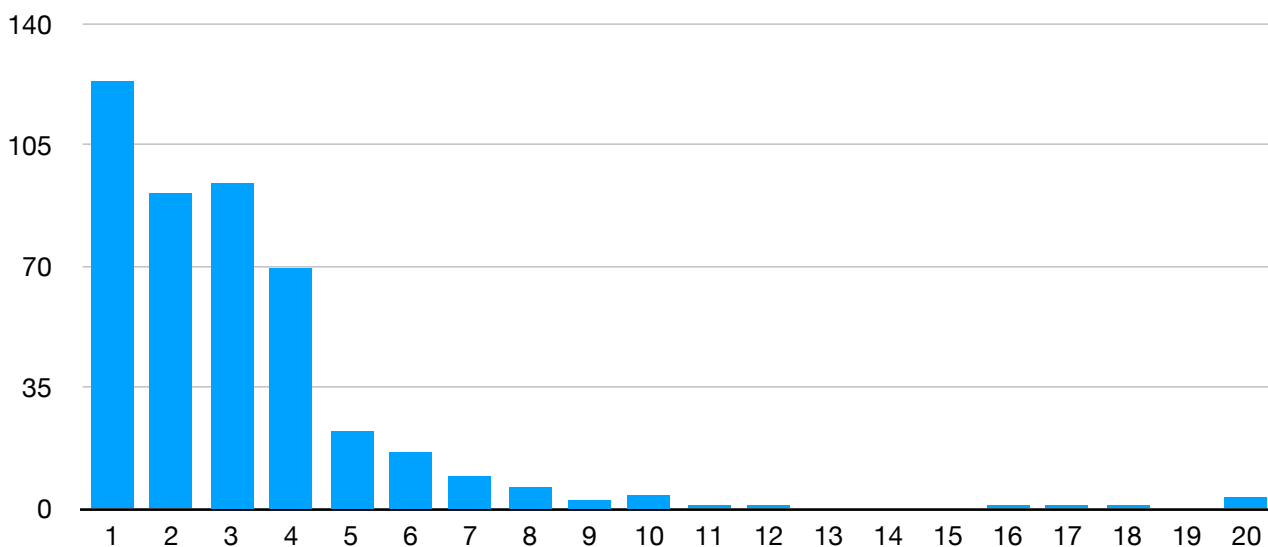


Figure 1 – Poll results

2.4 Participants

A total of 1,367 anonymous participants completed the poll. Due to the video's popularity, this number was reached within the first 48 hours of publication. Listeners used their own playback devices to assess the blind test.

The YouTube video itself received over 1300 comments and these were retrieved using a python script requesting the data from the Google Cloud Platform using the YouTube Data API.

Comment analysis suggested that most participants came from professional audio and audiophile communities, with little indication of substantial engagement from uninitiated audiences. Since members of these communities typically have access to high-resolution listening equipment—at least relative to a broader uninitiated audience—it was assumed that participants could assess the audio independently.

3. Results

Figure 1 exhibits the poll results as bin counts for all answers which attempt to quantify the number of switches. However, by far the most votes (923) was for the option “I didn't hear any cuts or I am not sure enough to guess”. Due to the high concentration of votes in this category, the bin has been omitted from the figure.

Three large language models (LLMs) were used to analyze the downloaded YouTube comments for common themes: GPT-4.5, GPT-4o and Grok 3.

Any qualitative assessment of the results from these LLMs is largely subjective in nature. And although the results of Grok 3 were indeed deemed significantly superior in incite and usefulness, one significant objective criterion presented itself which excluded the two other models without the need for further discussion: the GPT models only considered 100 YouTube comments whereas Grok considered all of them.

Manually reading and sorting such a large amount of comments, with many of them being of considerable length individually, would have been an excessively laborious undertaking. The Grok 3 LLM was able to read all of the comments, with a combined length somewhere in the region of the novel *Brave New World* by Aldous Huxley, and give a detailed and insightful breakdown as to the common themes, objections and reactions to the video, in a matter of seconds. The following prompt was given:

here are all the comments, can you quantify the 20 most commonly mentioned themes/concerns/criticisms etc basically the most common kinds of reactions people expressed after watching the video...

Truncating this output to the top 10, according to the LLM, the most common themes were:

DACs Don't All Sound the Same (Implementation Matters)

- *Count:* 48
- *Description:* Many commenters argue that factors beyond the DAC chip—like power supply, analog output stage, clocking, and circuit design—cause audible differences, challenging the video's claim of uniformity.
- *Example:* "The analog output section, noise isolation and the power supply is what you pay for with a higher end DAC."

Diminishing Returns in Pricing

- *Count:* 39
- *Description:* Agreement that while DAC quality varies, the price-to-performance ratio drops sharply beyond a certain point (often cited as \$200-\$1000), with expensive DACs seen as unjustifiable.
- *Example:* "Rule of thumb, beyond 2000€, not 200€, you get diminishing returns."

Audiophile Snake Oil/Scams

- *Count:* 35
- *Description:* Support for the video's premise that much of the high-end DAC market is overpriced hype or luxury-driven rather than sound quality-driven.
- *Example:* "Great video. Finally some common sense"

Blind Testing Challenges Perceptions

- *Count:* 31

- *Description:* References to blind A/B tests (including the video's WAV file) where differences were imperceptible, supporting skepticism about expensive DACs.
- *Example:* "Honestly couldn't tell you how many times you switched, I could guess, but it would literally be a guess."

Subjectivity in Audio Perception

- *Count:* 28
- *Description:* Acknowledgment that sound quality is subjective, and personal preference or placebo effects influence perceptions more than measurable differences.
- *Example:* "If you think something sounds better then it DOES sound better."

Criticism of Video's Oversimplification

- *Count:* 25
- *Description:* Complaints that the video oversimplifies DAC design by focusing solely on chips, ignoring other critical components.
- *Example:* "This is a very oversimplified view, the introduction is plain stupid with its sensationalist clickbait 'scam' warnings."

Power Supply Importance

- *Count:* 23
- *Description:* Specific emphasis on how power supply quality affects DAC performance, often cited as a key differentiator.
- *Example:* "The dac and the power supply are two different things."

Analog Output Stage Relevance

- *Count:* 21
- *Description:* Highlighting the analog stage's role in shaping sound, beyond the DAC chip itself.
- *Example:* "The output stage has waaaaay more influence than the dac/adc."

Support for Affordable DACs

- *Count:* 19
- *Description:* Endorsement of budget-friendly DACs (e.g., Topping, Fosi, Schiit) that perform as well as or better than expensive ones.
- *Example:* "The fosi zd3 is \$170 and has balanced outputs. Measures extremely well."

R2R/Non-Delta-Sigma DACs

- *Count:* 18
- *Description:* Mentions of resistor ladder (R2R) or other non-delta-sigma DACs as distinct alternatives with unique sound profiles.
- *Example:* "Have you never heard of r2r DACs?"

These results, although illuminating, should be interpreted with caution. Despite the extremely impressive results of the LLM, some of the comments, like so often on the internet, were categorizable to some extent under the heading of *Poe's law*. For example, it is not entirely clear from the comment in isolation whether "I switched [my] DAC and audio bliss ensued"

was intended as a lampoon or testament. This ambiguity may have compounded across the LLM's assessment of the comments. Yet a human evaluator is also subject to such ambiguity.

It is clear from this summary that many of the comments tended to be critical of the view that DACs are transparent and insist that individual sound characteristics are observable. In order to quantify the ratio of critical to supportive comments, the following prompt was given using the DeepSearch mode:

can you look at this data set of YouTube comments and tell me how many people appeared to agree with the video premise, that well designed modern DACs are transparent and there's no discernible difference between them, and how many disagreed and thought there were identifiable sonic characteristics between them, whether that was because of output stage, power supply or whatever else. Please give me a percentage for agree and a percentage for disagree. If a comment is seemingly irrelevant, simply exclude it from the assessment.

Due to the reasonably large size of the data to be analyzed and the apparent intensity of the DeepSearch mode, this query took Grok considerably longer to analyze at 9m 49s. The result was stated as follows:

Agreeing: 45.6%

Disagreeing: 54.4%

It seems likely that about 46% of relevant commenters agreed with the video's premise that well-designed modern DACs are transparent with no discernible differences, while 54% disagreed, believing DACs have identifiable sonic characteristics due to factors like output stage or power supply.

The evidence leans toward a split opinion, with controversy around whether DACs sound identical or vary due to design elements, reflecting differing listener experiences and technical views.

3.2 Data analysis of the poll

With $N = 1367$, only 0.66% correctly identified 7 switches, significantly below the 4.76% expected by random chance. The mean response (1.37, SD =

2.58) was far below the correct answer of 7, with 83.2% reporting ≤ 2 cuts.

A p-value was calculated as a binomial probability for observing 9 or fewer correct responses under the null hypothesis of random guessing:

$$P(X \leq k) = \sum_{x=0}^k \binom{N}{x} p^x (1-p)^{N-x}$$

The resulting value of $p < 10^{-9}$ is astronomically small. We fail to reject H_0 , finding no evidence that participants can hear DAC differences, and the data suggests performance significantly worse than random guessing. The sample size provides immense statistical power and the probability a listener can reliably hear the 7 cuts, given this data, is vanishingly small.

If participants could reliably detect any differences, some kind of distribution centered around the correct answer of 7 could be expected; and its asymmetry and kurtosis could provide further insights for discussion. But there is no such distribution. Rather, the data exhibits a strong skew toward lower values, with the vast majority of responses at 0 (no "switches" detected), indicating a systematic under-detection.

This suggests that most listeners perceived no change at all, while a smaller number may have simply mistook normal variations in the music for the "switches". As a result, the response distribution is highly leptokurtic (excess kurtosis ~ 24) and right-skewed, reflecting a concentration at 0 (no detection) with a rapid decline in higher response counts.

3.3 Data analysis of the comments

Performing any serious statistical analysis on the results of the LLM summary derived from the YouTube comments is of questionable utility. However, from the LLM summary and sentiment quantification, it is clear that a majority of people believe that good quality DACs possess identifiable unique sound characteristic, whether this is presented as an explicit claim (anecdote of possessing the ability to hear differences), or an implicit claim (the out stage or power supply etc affects the sound quality).

The most important incite here seems to be the fact that a majority believe well designed DACs are not transparent.

4. Discussion

The results suggest a profound dissonance between:

1. The clear inability to reliably identify any difference at all between an original recording and a loopback recording.
2. A majority of subjects insist that audible differences exist between DACs despite 1.

A particularly noteworthy observation is the frequency with which specific terms and phrases were repeated verbatim within the comments. For instance, 46 comments objected to the premise of DAC transparency by employing the exact phrase “output stage,” often without elaborating on its precise meaning.

In state-of-the-art DAC chips, the analogue output is typically presented as a differential voltage, necessitating additional processing before it can be interfaced with an amplifier. Some chips also output a single ended voltage but at the cost of an relative increase of THD and loss of dynamic range.¹ Some chips, especially older ones, output a differential current signal, and require an additional I/V stage to convert this signal to a voltage before being converted to a single-ended output. This is typically achieved using a pair of operational amplifiers (op-amps) per channel, for example the NE5534, one for each end of the differential output.² After the I/V section, or if this section is already integrated as part of the chip, the differential output is then typically not only converted into a usable single-ended voltage but also low pass filtered, DC decoupled and buffered all in one section often centered around another low noise op-amp, per channel, for example an LT1028. The additional components built around the op-amps in these two sections are resistors and capacitors. These three component classes are fundamental to the most basic practical electronics understanding and complete schematics are freely provided online by the semi-conductor manufacturers such as Texas Instruments. The suggested circuits are highly transparent and allow the end product to achieve the signal to noise ratios rated by the chip manufacturers. Although it is possible, and commonplace, to deviate from the chip manufacturer’s recommended circuitry,

perhaps by integrating vacuum tubes or other kinds of filtering, it is likely done at the cost of reduced dynamic range, increased distortion and questionable utility for a device which typically has the goal of transparency.

It is possible to increase the dynamic range of these chips further than the advantages of using differential outputs, by using two channels of the DAC chip per audio channel, to directly feed both sides of a balanced XLR output socket without the need for a transformer, effectively shifting the starting point of the common mode rejection back to run the entirety of the real world signal path. However, this is not an esoteric design hack, it is publicly recommended in the handbooks but has the cost implication of doubling the chip count, as well as many of the other components already mentioned. Yet it is important to note that, achieving a superior dynamic range will, for the most part, go entirely unnoticed in terms of human perception for first generation reproduction of a DAC for music use. The 130db of dynamic range attained by this design approach far exceeds any plausible requirement for home listening, even with the most dynamic music recordings.

The commonly held belief that “the chip is the least important part of the sound of a DAC” was trivially true for hifi manufacturers in the past. The high end chips are delivered highly consistent transparent audio quality and, despite the fact the handbooks for the chips detail the recommended circuitry to achieve their quoted specs, a manufacturer has an infinite amount of ways to create a bad or defective design, and very few ways to create a good one, not to mention any additional amplification and features the final product should offer.

Nowadays the chips are doing more internally, with click free muting and zero-crossing detection, soft ramp-up, auto muting, configurable filters, voltage based outputs, integrated power regulation, even integrated DSP. So the perpetuation of the idea that “the chip is the least important part of the sound” is not so much tired as it is redundant. The same would seem to apply for power supplies affecting the sound. Perhaps the most redundant of all are the claims concerning clocking and jitter, since the vast majority of chips are clocked

¹ Texas Instruments. (2025)

² Texas Instruments. (2006)

internally and/or have robust jitter reduction technologies built in.

The prevalence of the term 'output stage,' employed without further clarification or the use of more precise terminology such as 'output buffer' or 'differential conversion,' invites explanations of the Pavlovian variety. Deliberately obscuring or mystifying the circuit design could plausibly be of commercial interests to manufacturers of DACs. Exposure to such marketing materials could prompt preformed responses of this kind when subjects find their beliefs are challenged. The first result of the google search “dac” “output stage” is of a manufacturer’s website claiming “The output stage of any DAC can have a large influence on its sound quality”. This manufacturer happens to sell extremely expensive HiFi DACs, with their flagship offering priced at almost \$100,000.

Following this top result, almost all of the subsequent results are HiFi forums, often featuring discussions where contributors provide factually incorrect or misleading responses to technical questions. This invites the alternative, that the phenomenon could be an artifact of socially reinforced misinformation, wherein individuals perpetuate and amplify inaccurate beliefs through group dynamics. In their 2016 study, Del Vicario et al. demonstrate how misinformation spreads rapidly within echo chambers—homogeneous online communities where users reinforce each other’s views. They describe cascades as the process by which information, accurate or not, propagates through a network, gaining momentum as users share and endorse it, often driven by social homogeneity and confirmation bias. In the context of HiFi forums, this suggests that technically incorrect claims about equipment like DACs trigger cascades when enthusiasts, clustered by shared interests, repeatedly affirm these ideas, embedding them as accepted truths despite their lack of factual grounding. The paper’s analysis of social media data reveals that such cascades thrive in polarized environments, where critical scrutiny is overshadowed by the collective validation of the group.³

It may seem perplexing that individuals confidently assert clear sonic differences between DACs in the comments section of a video, despite being unable to detect such differences in a blind test in the exact same video. This cognitive dissonance highlights the powerful influence of non-sonic factors—such

as marketing, price, prestige, aesthetics, and groupthink—which can overshadow and ultimately take precedence over the actual auditory perception of sound.

5. Conclusion

Well-designed, professional-grade DACs—such as the TC Electronic BMC-2 used in this test—exhibit transparency in sound reproduction, with no detectable difference between an original recording and the same recording processed through such a DAC. Since the tested, moderately priced DAC was already audibly transparent to listeners, a more expensive DAC would not provide additional fidelity. If transparency across multiple recording generations were a requirement, further study would be necessary to assess potential sonic differences between DACs. However, in single-generation listening, there is no empirical basis to suggest that high-end DACs offer any audible advantage.

Despite this, many individuals continue to assert that audible differences exist, a phenomenon that may be driven by marketing influences or group-based psychological factors.

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³ Del Vicario et al. (2016)