BRICASTI DESIGN M1

Reviewer Edgar Kramer

DIGITAL-TO-ANALOGUE CONVERTER

THE M1 OFFERS COMPREHENSIVE DIGITAL INPUT OPTIONS AND BOTH RCA AND XLR ANALOGUE OUTPUTS.

From time to time a high-end product comes along that generates a buzz, an early marketplace 'pulse' that spawns consumer curiosity and general audio enthusiast dialogue. The genesis of such activity may be a certain component's unique design or functional features, a notorious bloodline or heritage, or simply by the virtue of hitting the market at an opportune time.

Recently, among the proliferation of digital-to-analogue converters sprouting onto the market (predominantly at the entry levels), one stand-out high-end DAC that has tongues wagging is the M1 from consumer and pro electronics specialist Bricasti Design. Maker of highly-regarded studio electronics, Bricasti has hit the market with a state-of-the-art DAC that is the fruit of some of the best grey matter in digital audio, namely, ex-Madrigal and Lexicon Brian Zolner (company President and the 'Bri' in Bricasti) and Casey Dowdell (digital software designer and the 'cas' in the nomenclature). Further digital design is outsourced to Aevee Labs, a company made up of ex-Madrigal engineers and headed by Bob Gorry, former Chief Engineer at Madrigal Audio Labs. All this Madrigal and Lexicon (now Harman International) über know-how has had some obvious design influences on the Bricasti products; quite aside from the treasures hidden inside, there's more than a passing physical resemblance to Mark Levinson components of yore in that smoothly curvaceous gunmetal and silver aluminium external livery.

MULTITASKING

The M1 DAC is an elegantly-styled single rack-unit full-width component with a hell of a lot of on-board technology. There's no doubt that the Bricasti mandate for this product was to create a no-holds-barred DAC with substantial proprietary technology aimed at the top-end of the market. For starters, the M1 is a dual mono unit with independent linear power supplies, DACs, DDS clocking and analogue stages for each channel. This, of course, means each channel enjoys both well isolated circuitry from the potential ravages of digital noise and adequate power supply requirements. The M1 uses twin Analog Devices 1955 stereo Delta/Sigma 24-bit eight times oversampling DAC chips, one per channel, in mono configuration and using Bricasti's own filter technology.

Bricasti claims an extremely low jitter figure of 6-picoseconds, while there's support for sample rates of up to 192kHz and 24 bits (for further technical details see the specifications panel). Inputs are generously provided for by way of XLR AES/EBU, USB 2.0 (asynchronous), SPDIF and Toslink. Analogue outs include balanced XLR and single-ended RCA. Unusually for consumer gear and more prevalent in the pro area, each XLR output features a small back-lit set-screw receptacle which allows fine-tuning of the output voltage gain from +8 to +22dBm. This has obvious benefits when matching gain to a power amplifier — using the M1 on its higher output levels avoids bit-stripping. An IEC receptacle, power switch and mini-jack trigger socket round out the rear panel hardware.

You'll be stricken with *déjà vu* by the front panel's red dot-matrix display (Mark Levinson Reference redux…) which serves as the information hub for the M1's status and multitude of functions. A beautifully machined solid aluminium knob serves as the menu navigation and volume control for the preamplification function while, to the right, two rows of buttons serve to switch between inputs, filters and status (internal temperature, phase, sample rate information) and display (brightness level). A further button switches the M1 into auxiliary mode while the last control button serves as an 'enter' command. A standby button on the far right completes the buttonry.

Bricasti has conceived its own filtering technologies and the M1 offers easy and quick access to a number of options in that area. There are nine varying versions of linear phase digital oversampling filters (linear 0-8) and six minimum phase filters (minimum 0-5). Each provides subtle but noticeable sonic differences and flavours. We used the linear 2 filter – but as they say, your mileage may vary.

Finally, the level control allows direct connection to a power amplifier. The level control works in the digital domain and applies across both analogue output types. The company claims no bit-stripping on settings above -7, although it's suggested the level be set to zero when used with a separate preamplifier.

Physically the M1 is beautifully constructed from CNC-machined aluminium panels that are seamlessly assembled and joined. The extensively perforated top panel allows efficient dissipation of heat from the heavy processing inside. A nice visual touch — in low light you'll see a mellow red hue that casts upwards from the LED 'cauldron' inside. An solid metal remote

FROM LEFT: GEORGE FRACCHIA, ZENSATI AUSTRALIA (BRICASTI CONSUMER PRODUCTS), DEBORAH SLOSS, STUDIO CONNECTIONS (BRICASTI PROFESSIONAL PRODUCTS) & BRIAN ZOLNER, PRESIDENT, BRICASTI DESIGN.

INTERVIEW WITH BRIAN ZOLNER, PRESIDENT, BRICASTI DESIGN

Audio Esoterica: *What technologies, especially in the proprietary filters, set the M1 apart from the over-crowded DAC landscape?*
Brian Zolner: Well, for starters, I think that not many DACs use their own reconstruction filters. Some do, but that's the first differentiator right there; not many do. We also have our 'minimum phase filter' which is not that common, and the traditional 'linear phase' filters. Probably 99% of DAC products don't do their own filters and are using a common linear phase filter. There's nothing magical about it other than good implementation, the proper architecture and the ability to do it.

AE: *What DAC chip does the M1 use?*
BZ: We use a pair of the top Delta/Sigma Analog Devices 1955 converters with 8x oversampling, and that allows us to make better filters. You still end-up with 44.1kHz, you're not beating the odds, but we're not rate-converting. That's when someone tries to cheat the law, right. But when it comes to filters, it's a trade-off, like everything. That's why we offer so many filter options. Then we get asked "what's the best filter on the M1?" — well it's the one you like best. I personally find that with the minimum phase filters… I don't listen to anything else; they're true to the source. We also went for the lowest distortion possible. I believe that as far as sound quality perception, you're able to pick distortion quite easily. Our distortion levels are at the edge of what can be measured. The trade-off is a little less dynamic range where the difference is imperceptible.

AE: *There seem to be opposing views as to the superiority of digital inputs versus USB inputs. What is the Bricasti take on this?*
BZ: I listen at home via USB for convenience, sound quality, all of the above. What I've done in numerous instances with rooms full of people, and at the New York High-End Show and Rocky Mountains Audio Festival is just my PC, into the M1 directly into D'Agostino monos and a nice pair of Harbeth speakers and then introduced a Parasound memory CD player. Ripped WAV files into USB and the same music on CD and then asked the audience "what do you like?" Everyone, without exception chose the computer music. And then I play an HD track and it's BAM! End of story. You're free from that little 44.1kHz CD "box", which is good enough, but now you're free from all the limitations. Let's move on and never turn back.

THE LOOK MAY BE INDUSTRIAL BUT THE M1 IS IMMACULATELY ASSEMBLED AND FINISHED. THE FRONT PANEL'S ROTARY AND PUSH-BUTTONS OFFER CONTROL OF ALL THE UNIT'S FUNCTIONS.

control can be ordered as an option and it's provided with a small receiver module that plugs into the minijack trigger socket.

SOLID BRICK

Perplexing as it may seem, the term 'analogue-like' is still being used — and overused — when referring to digital products with outstanding sound quality. I suppose it's a term that harks back to the days when the majority of CD players and DACs exhibited the glare and brittleness of digititis that was absent from vinyl in general. Things have changed, especially in the high-end. And if 'analogue-like' is a term of ultimate praise, then it surely applies to the M1.

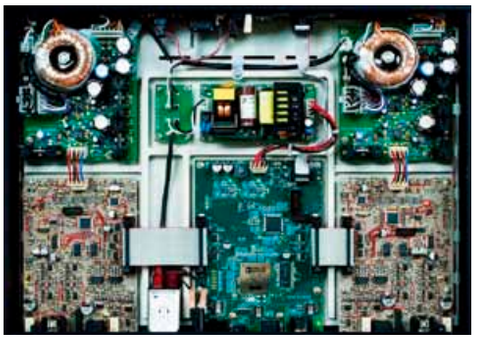
Here is a DAC that is so resolving, so correct in its recreation of timbre, so utterly 'musical' that it's nigh on the ideal digital product. Feed it a quality transport or a well-configured computer and you'll be delivered dollops of digital delight. The close-miked sibilance of Friend N Fellow's "Light My Fire" from their *Covered* album (CD and AIFF via MacBook and BitPerfect) was as controlled as I've ever heard it. What can sound slightly 'spitty' on my reference player and downright harsh on almost all others sounds natural and just more 'there-real' via the M1 conduit. What the Bricasti manages to do is remarkable; it gives you extraordinary resolving power and detail while never, ever, becoming brash. Digititis in absentia. And that's what the analogue aficionados revel in.

However this level of refinement does not impede transient attack or dynamic contrast. The percussive assault intro on Cat Power's version of "New York New York" (from *Jukebox*) was delivered with power, speed and a conviction that could threaten the integrity of lesser bass drivers. The well-recorded snare is equally well treated with the appropriate snap and subsequent natural decay. During the review process Chan Marshall's voice, Kelly Flint's, Chris Jones', Jackson Brown's, you name it, they were all rendered with, well… humanity. In other words, the verisimilitude, the truth of their tone was flawless. The idea or term 'body', in the audio lexicon, has always been associated with valve amplification that imparts a sense of solidity and presence to instruments and vocalists as they're presented within the soundstage. Rarely would these concepts be referred to when addressing sonic qualities of digital source products. This notion may be pre-Bricasti. Not only were images razor sharp in focus and placement within a large soundstage — things that competent components can easily achieve — but the various strands of instruments and vocals were given a sense of physicality. A grand illusion indeed.

CONCLUSION

The name Bricasti is renowned and respected within professional studio circles for reference standard reverb units. The M1 DAC sees the company straddling both pro and high-end consumer camps, the latter being populated by fickle and trendy enthusiasts — a *whole* different ball game. But make no mistake; the bull has been taken firmly by the horns. The M1 is an outstanding DAC that offers generous connecting options, flawless build quality and exceptional technology. And when it comes to its sound quality, analogue sound association or not, it may just be as good as digital sound can get.

SPECIFICATIONS



INPUTS: XLR AES/EBU 24-bit single wire, USB-2, SPDIF, Toslink.

SAMPLE RATES: AES in at 44.1kHz, 48kHz, 88.2kHz, 96kHz, 176.4kHz, 192kHz

FREQUENCY RESPONSE DIG I/O:
DC to 24kHz @ 48kHz,
DC to 96kHz @ 192 kHz

D/A CONVERSION:
24-bit delta sigma, 8x oversampling

BALANCED ANALOGUE OUTPUT:
XLR balanced (pin 2 hot) with impedance at 40 ohms, max output level +22dBm, min output level +8 dbm, dynamic range >120dB A-weighted, THD+N @ 1k: 0.0006% @ 0dbfs /0.0004% @-30dbfs

UNBALANCED ANALOGUE OUTPUTS:
RCA with impedance at 40-ohms, output level +8dBm (2V RMS), dynamic range >120dB A-weighted, THD+N @ 1k: 0.0006% @ 0dbfs / 0.0004% @-30dBfs

PRICE: $11,900

DIMENSIONS: 432 × 305 × 64mm (wdh)

WEIGHT: 5.4kg

WARRANTY: Two years

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