

hardware review



PrimaLuna Evolution EVO 100

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Digital Analogue Converter DAC

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With the rise of online music services, the demand for high-quality digital to analogue converters is increasing. The use of Tidal, Qobuz and Spotify streaming services as an addition to home music collections has become indispensable. It's only logical that a company like PrimaLuna should release a DAC. An earlier version in the form of a ProLogue Classic DAC was put on hold because the entire range of PrimaLuna amplifiers now appears in the Evolutionline. It gave PrimaLuna the time and the opportunity to further refine the DAC and to give it a look that matches the Evolutionline.

Although the DAC relies heavily on the CD players from the brand, there are some differences both internally and externally. Beside the absence of a CD tray, the new front panel has two narrow text displays, one input, the second indicates the sample rate. The DAC comes with an indestructible remote control, to dim the display in steps and mute the output. This 12 kilo DAC is more reminiscent of an amplifier than a converter which seems to be the way with PrimaLuna. Inside there is the EVO 100 circuit with hardwired tube sockets for ECC83/12AX7 amplification tubes, ECC82/12AU7 control tubes and GZ34/5AR4 rectifiers, all in a double mono configuration. A few large Nichicon capacitors flank the rectifier tubes and ceramic bases hold the pins of the tubes, tubes that all carry the PrimaLuna logo.

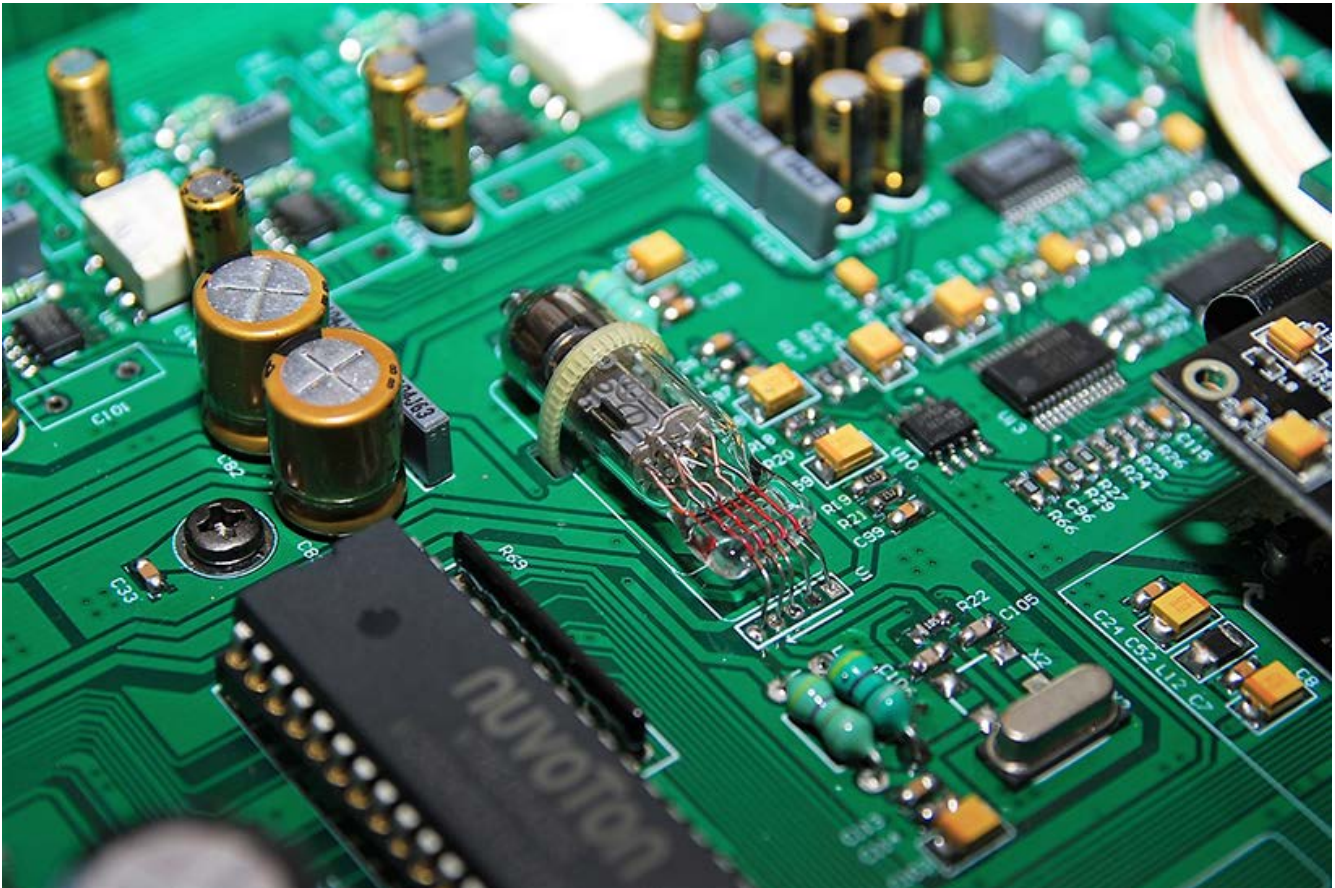


SuperTubeClock

I also discovered an extra tube on one of the circuit boards, close to the sample rate converter and the Burr Brown PCM1792 converter chip. This is part of the SuperTubeClock (below), which synchronously supplies both the Sample Rate Converter and the DAC chip with a clock signal. The oscillator generates a sine wave of 24.576MHz, which is converted into a square wave with very high flank speeds using specific high-frequency techniques, so that there is no (time-) space for jitter generation on the SRC and the DAC chip. In line with the fact that the steepness of the flanks (sides) is inversely proportional to the amount of locally produced on-chip jitter. The clock is built around a Russian mini triode tube, once specially designed for oscillator circuits. Triode tubes have a low noise of their own and are extremely linear if they are used in the right way. The square wave that is generated is almost ideal and free of noise between 10 Hz and 100 kHz compared to the oscillation frequency. The digital PCM (or DoP) signal that comes in via Toslink, RCA, AES/EBU or USB is always upsampled via asynchronous sample rate conversion to 24bit/192kHz. This creates an effective jitter suppression with frequency and phase linear behaviour far beyond the audio band.

Separating and linking

Next is the separation of the earth from the digital and analogue circuits and RF decoupling to prevent mutual interference. In addition, there is a galvanic separation between the digital stages (up to and including the I/V converters) and the analogue stages, realised with balanced 1:1 transformers developed for PrimaLuna. The current to voltage (I/V) conversion is balanced, resulting in halving the harmonic distortion, doubling the dynamic range and doubling the signal to noise ratio. The latter is purely theoretical because the converters already have an S/R of 127 dB. The separate USB input connects to an XMOS chip and the AES/EBU input goes to a digital transformer. The DAC includes all the necessary power supplies for the digital circuits and separate ones for the analogue ones. The hard wired analogue tube section is filled with DuRoch premium audio capacitors.



The EvolutionEVO 100 delivers an output voltage of 2V nominal and the output impedance is 2800 Ohm, which is high for loads that can drop below 10 kOhm. The output signal then decreases proportionally, the distortion does not increase at all according to PrimaLuna. This is because the 'last' tube (ECC82/12AU7) is set very far in class A bias, with the two tube halves parallel, to makes the linear area twice as large.

From file to cone

I set the DAC up with a Melco N10 digital library (server), connected by the ethernet port to an Auralic [Aries G1](#) digital transporter. Links to the Evolution EVO 100 DAC were alternately made via AES/EBU, RCA and USB connections. The analogue signal from the DAC is carried by Crystal Cable Connect Ultra cables to my beloved Audia Flight Strumento No.1 line amplifier and from there with balanced Yter cables to a Pass Labs X250.5 power amplifier. The latter feeds a pair of PMC fact.12 speakers with Townshend Audio Maximum Super tweeters. The Evolution EVO 100 DAC takes the place of my reference DAC, a Metrum Acoustics Pavane Level II. All devices get their power from a PS Audio P5 Power Plant, only the Pass Labs is directly connected to a wall outlet. The fact that USB works will not surprise anyone, but given the large and unpredictable influence of a PC as a source, or the Melco N10, or the Auralic Aries G1, all depending on the OS, the drivers, the Apps and the interface, I have not included that in the review. I use alternately the Lightning DS software from Auralic or Roon running on a NUC to control the Aries G1.

Voices

As if it were a tube amp, which it is partly, I gave the EvolutionEVO 100 DAC the necessary time to play and to warm up each time. I warmed myself up with the voice of the American soprano and jazz singer Alicia Olatuja who on her CD *Intuition Songs* plays the music of female composers. Her performance of 'Ordinary Love' starts with driving bass, after which voice, percussion, trumpet and more is added. The EVO 100 puts a lot of emphasis on the voice, without forgetting the high tones. It is the bass that remains slightly behind, not going as deep as with the Metrum converter normally connected. Which is pretty nice because (too) much bass is a problem for most living rooms. Some switching between digital interlinks brings me to a preference for the AES/EBU connection, which is warmer in sound, offers a wider stereo image and reveals more detail than the RCA, USB or Toslink alternatives. If you do not have an AES/EBU output on the streamer, a 75/110 Ohm digital transformer from Neutrik or Canare between the streamer and EVO 100 pushes things in the right direction.



When Alicia sings 'Cheerokee Louise' by Joni Mitchell it brings out a beautiful stereo image with a choir correctly positioned in the background, with the correct image height and enough depth. A singer you may have heard at audio shows is Anette Askvik and her track 'Liberty'. If you think "it's all about streaming" then you're right, I rip the CDs to my Melco and play them that way. Anette's voice on the EVO 100 digs into your soul and is surrounded by keyboards, cello, drums and more. When a saxophone comes in, it floats through space and leaves a trail of sound behind that complements Askvik perfectly. The intelligibility of the voice is good beyond expectation, low tones are defined and via AES/EBU sufficiently deep and heavy. The EVO 100 DAC sounds great with its digital buddies from Melco and Auralic. Patrick Bruel represents the male singers with 'Drouot', originally by the French singer Barbara. With most music, it is noticeable that the stereo image remains trapped between the the speakers, while depth and height are more easily released. An observation that hasn't changed in recent weeks. It ensures that Bruel too remains very focused, that his voice is separate from the band, that the instruments behind him are small but do not merge into one another in such a way that their own identity is lost. On the contrary, each instrument preserves its character and its natural ambiance.

Classical

In 2005 Sharon Bezaly released a beautiful CD of Mozart flute concerts. She plays with the Ostrobothnian Chamber Orchestra and spoils my ears with her flute. Where voices are close, Bezaly has found a place next to the members of the orchestra, a more natural setting for classical work. The flute floats easily into space, with the violins behind never sharp, but clear and defined in sound. The flute is not an easy instrument to handle, it can be very disappointing on lesser systems, here the EVO 100 provides a round sound, clear and pure, never overpowered by the orchestra. A work by one of my favourite orchestras, the Academy of St. Martin-in-the-Fields, is Handel's 'Concerti Grossi'. Iona Brown's solo violin stands very nicely next to the organ and is surrounded by the other members of the orchestra. This is how classical should be to my ears: held at some distance, set up in a semi-circle, soloist in the middle, left and right approaching. Pointed, detailed, supple and musical. Detailed enough to recognize the quality of the DAC, not so unravelled that only details stand out and the music is forgotten. I can dream away on these waves, the eyes closed, speakers virtually disappearing from the room, sinking into my own bubble of audio happiness. Classical music without piano is impossible, preferably with work by Chopin and this

time from the skilful fingers of Arthur Pizarro. What I want to hear and luckily get to hear are the keyboard, the strings and especially the body of the instrument although the body could be more impressive. But maybe the producer has given more attention to the strings and keyboard than the body, anyway, what I hear is a beautiful and natural sound balance surrounded by the acoustics of the recording space. Where Pizarro makes the dynamics pop, the EVO 100 follows slavishly and willingly. In soft passages, the DAC continues to perform with a completely silent background, even though it doesn't achieve the absolute tranquillity of a top-class solid state ladder converter.



Versatile jazz

Jazz is so varied, you can't put it all together. I have a small selection of jazz that moves me with recordings that are mostly above average. Take Jim Tomlinson with 'Manha de Carnaval', a bossa nova composition, but very nice. The song is lively with a wonderful saxophone, dynamic piano and percussion, maybe a bit too clean sounding. Even increasing the volume does not help. With the Bobo Stenson Trio's 'Song of Ruth' from the CD *Cantado*. Here the peace and quiet makes room for shuddering cymbals, tom-toms, piano and bass. Dynamics are much more lively and detail in the treble is wonderful. Roon is bettered by Auralic's Lightning DS control app here, the reproduction is more intense, gaining impact and drama. The stereo image is unfortunately very close, placement of instruments is less natural, the drum kit seems to be built around the bass and the piano. What I really appreciate is the way the DAC reacts, a mediocre converter would have shown little difference, the EVO 100 puts the differences as if under a magnifying glass. I end with Nik Bärtsch Mobile, and 'Module 24 19' from the album *Continuum*. A 24 bit, 48kHz resolution download and not a ripped CD. Some heavy drums move the floor, but less than on my reference DAC. Music stands wide and deep in the room, captivates and carries you along with the sound and tempo changes that subtly alternate. My advice, look for a streamer that will get the most out of the EvolutionEVO 100 DAC and don't be fooled into believing that all streamers and software are the same. The Auralic Aries G1, which was temporarily available, is in my opinion highly recommended, used with the excellent Lightning DS software for jazz or Roon for classical and vocal music. Your dealer may be able to guide you to a generic solution and of course your own preference will play an important role.



Final word

With the PrimaLuna EvolutionEVO 100 DAC, technique is quickly forgotten and the accent is on the music. Which is as it should be but sometimes isn't, regardless of the price range. Sometimes technology predominates and options such as various filters, DSD, MQA, analogue inputs, volume control, takes priority presumably to impress the less experienced. That's something no PrimaLuna has been tempted to do. It's music, music and music that matters. The EvolutionEVO 100 DAC has been playing for many hours to my great pleasure. It's in the premier league and will be a welcome addition to the range particularly for owners of PrimaLuna amplifiers. For everyone else, the EvolutionEVO 100 DAC may be the first PrimaLuna product in the house, but probably not the last.

SPECIFICATIONS:

Type: Digital to analogue converter

Digital inputs : USB, S/PDIF RCA coax, AES/EBU XLR, S/PDIF Toslink optical

Analogue output : single ended RCA

Headphone outputs: none

Formats supported: PCM, DSD

Sample frequencies : S/PDIFinputs: 24 Bit/192 kHz PCM and DSD DoP64. USB 32 Bit/384kHz PCM, DSD128 DoP

Weight: 13kg

Dimensions HxWxD: 190 x 279 x 404mm

Colours: silver, black

PRICE: £2,888

MANUFACTURER DETAILS:

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