



# Maximinus

Universal DSP controlled discrete resistor ladder  
32bit/384kHz audio DAC

This is the original multibit DAC concept with the most sophisticated implementation and highest precision.

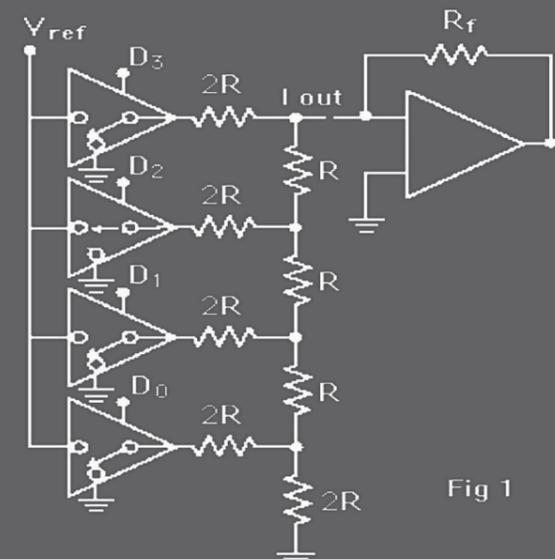
We based the solution on the best technology available and applied our knowledge and experience taking the design to the extreme.

Features:

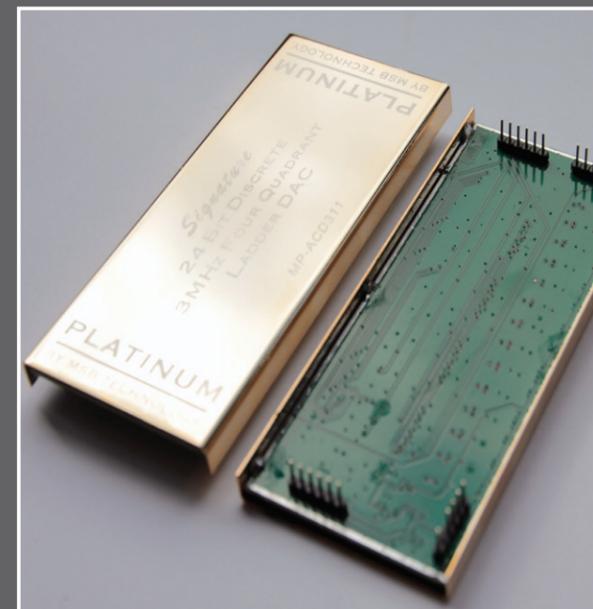
- Multibit conversion
- 25 bit resolution
- 4 quadrant sign magnitude operation
- 8 inputs (6 +2 optional)
- Balanced outputs on RCA or XLR (selectable)
- Transformer output
- No I/V conversion or output buffers
- No filtering after dac
- Total galvanic isolation of internal circuits from outside world
- Operates at 32bit/384khz
- Internal clock generators
- Selectable relocking
- Selectable upsampling
- Selection of 4 digital filters
- Firmware upgradable
- modular design for field upgrades
- 32/384 Asynchronous USB interface (option)
- Sealed solid aluminium enclosure

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Maximinus uses a concept called R2R ladder. This is a resistor matrix that is switched for the various output levels outputting a fraction of an internal reference (much like a volume control).

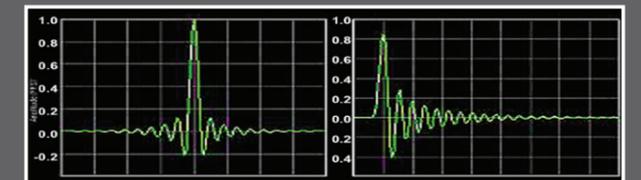
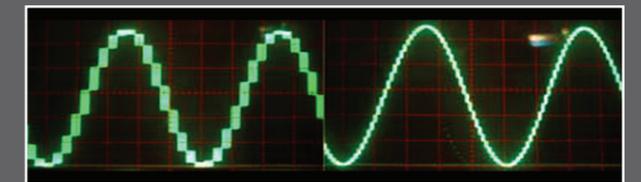


In order to bring the performance of multibit DAC's to new levels the only solution is to build them from discrete components as there are no off the shelf chips good enough. This involves the selection of ultra precision resistors, thermally coupling them and



building a very fast and sophisticated switching logic to control them. The result is an order of magnitude better performance than what is achievable by IC based solution.

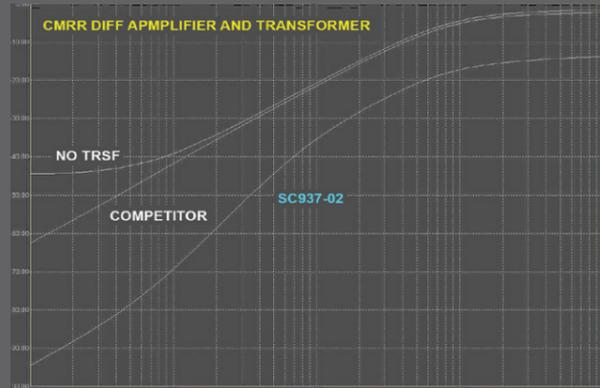
To take advantage of the available resolution and bandwidth we had to implement a state of the art digital pre-processing. This is a suite of algorithms that would apply digital filtering and up sampling to the incoming data stream. After processing a 16bit 44.1kHz CD data stream it is converted to 32bit 352.8kHz data fed directly to the DAC. This greatly improves low-level resolution and the sense of space. The process is all user controllable and defeatable for purist and non-oversampling use.



Apart from taking the uncompromising approach of using discrete ladder technology we have taken exceptional care with the construction and operation of each circuit within the DAC.

To keep up with tech development we have 2 internal slots for options to be used when the time calls for it.

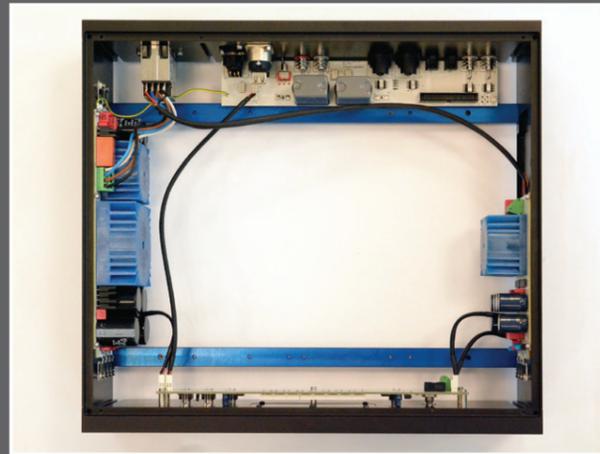
We use transformer or optical decoupling of all inputs, meaning that contaminated ground connection and other interfering signals don't make it to the inside of the unit.



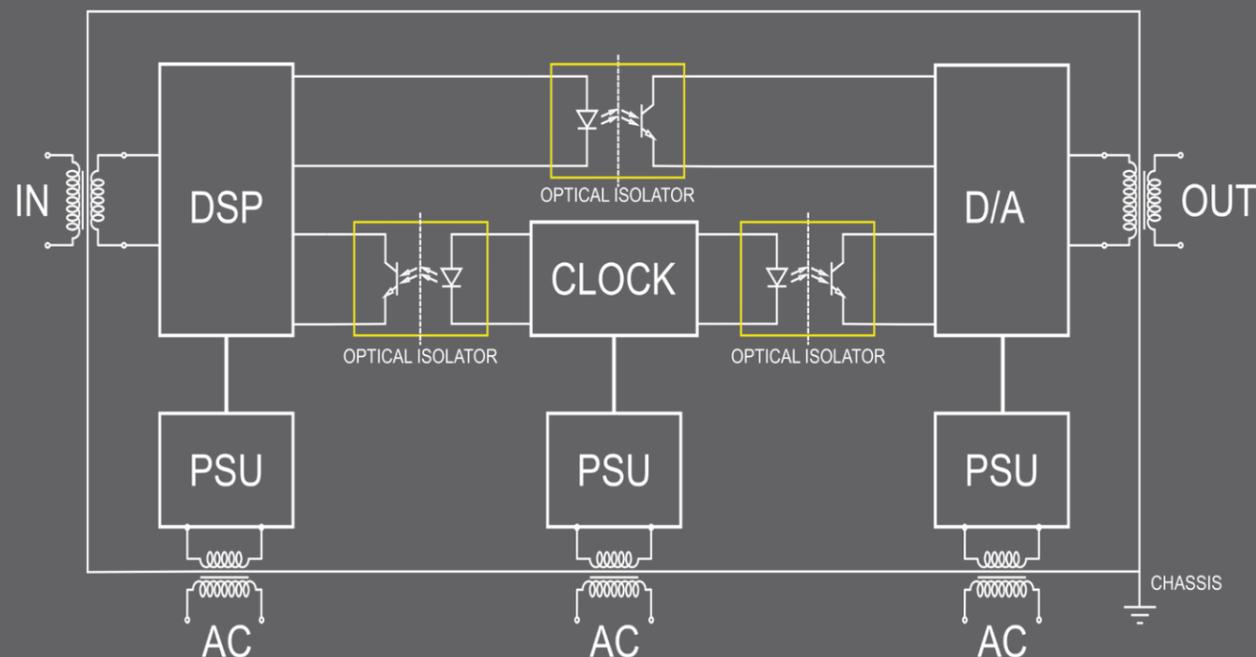
We have no output buffer or filter at the DAC output providing the cleanest possible output signal, just a transformer matching the impedance of the converter resistors to the outside world and isolating them from external influence.

We use completely separate power supplies for each block in the DAC: the Converters, Clock, DSP and Control logic all with floating ground planes and our unique constant current regulator technology.

Then the whole assembly is mounted in a solid aluminum case for vibration damping and EMI/RFI screening following the same construction concept as our preamplifiers.



It's a different league from all currently available high end DAC's hence the name of a Roman Emperor.



## Specification

- Inputs
  - 2 x COAX (RCA) connectors. Limited to 384 kHz, 24 bit data
  - 2 x AES/EBU (XLR) connectors
  - 2 x TOSLINK (optic) connectors. This format has limited bandwidth and works for maximum sample rates of 192 kHz
  - 1 x USB (optional)
- Output
  - 1 pair unbalanced RCA connectors
  - 1 pair balanced XLR connectors
- Power supply ..... 115 or 230 V
- Power consumption ..... 30W
- Dimensions ..... WxDxH - 432x400x120 mm
- Weight ..... 12Kg
- Finish ..... Black or Silver anodized aluminium

