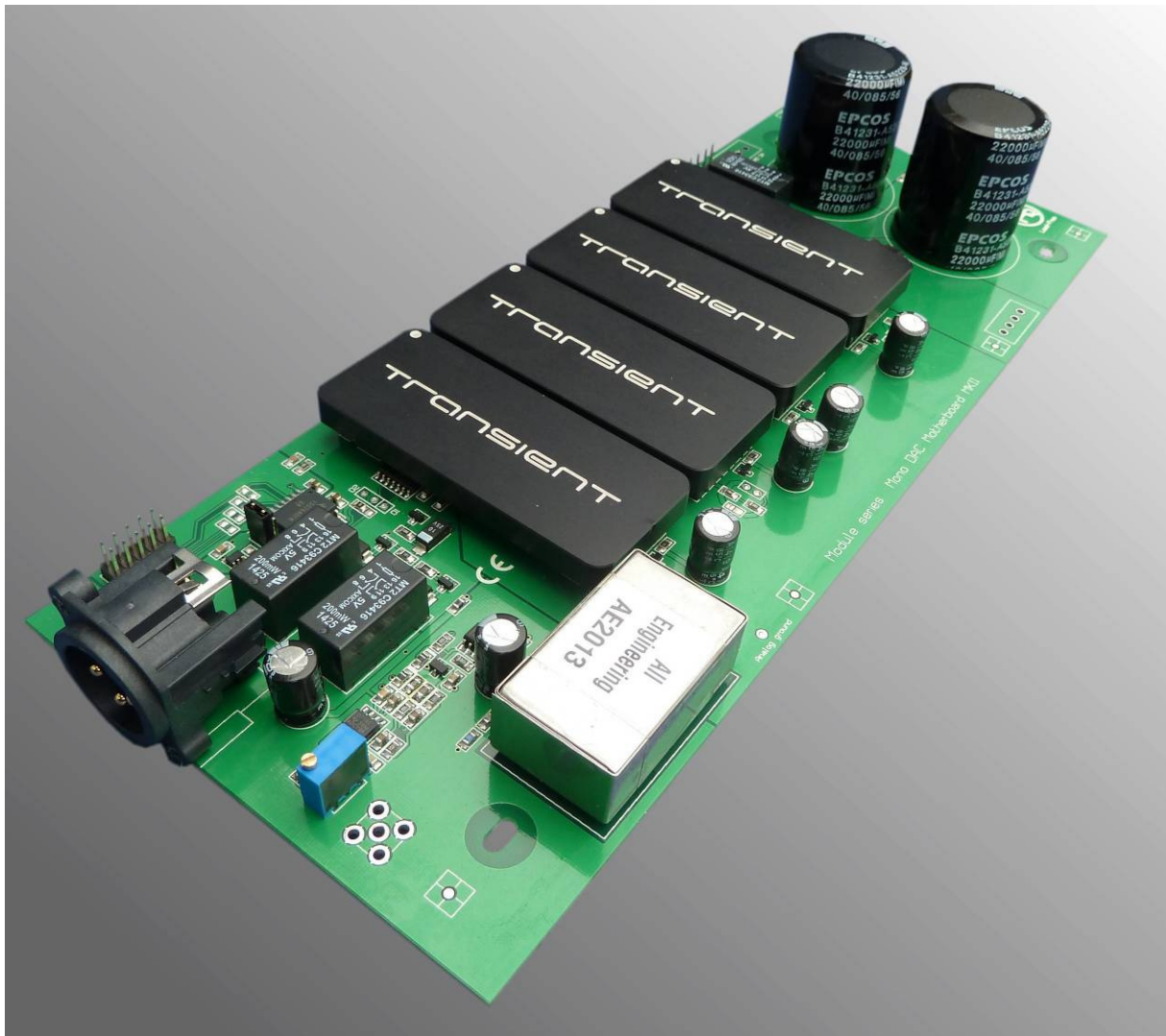


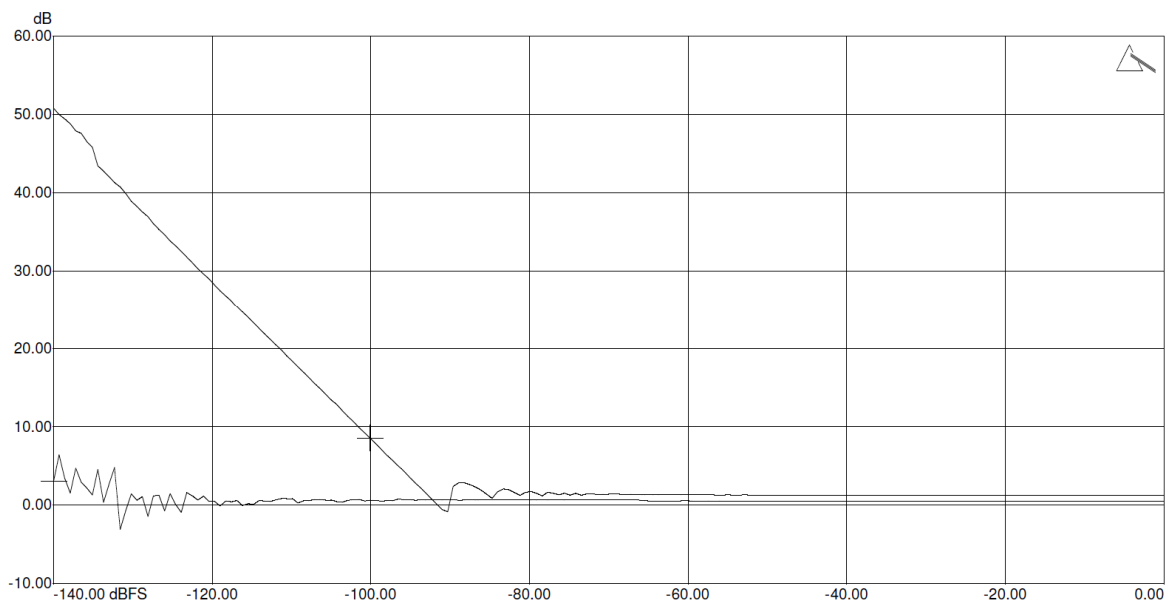
TRANSIENT

Full balanced Mono Dac Motherboard application information



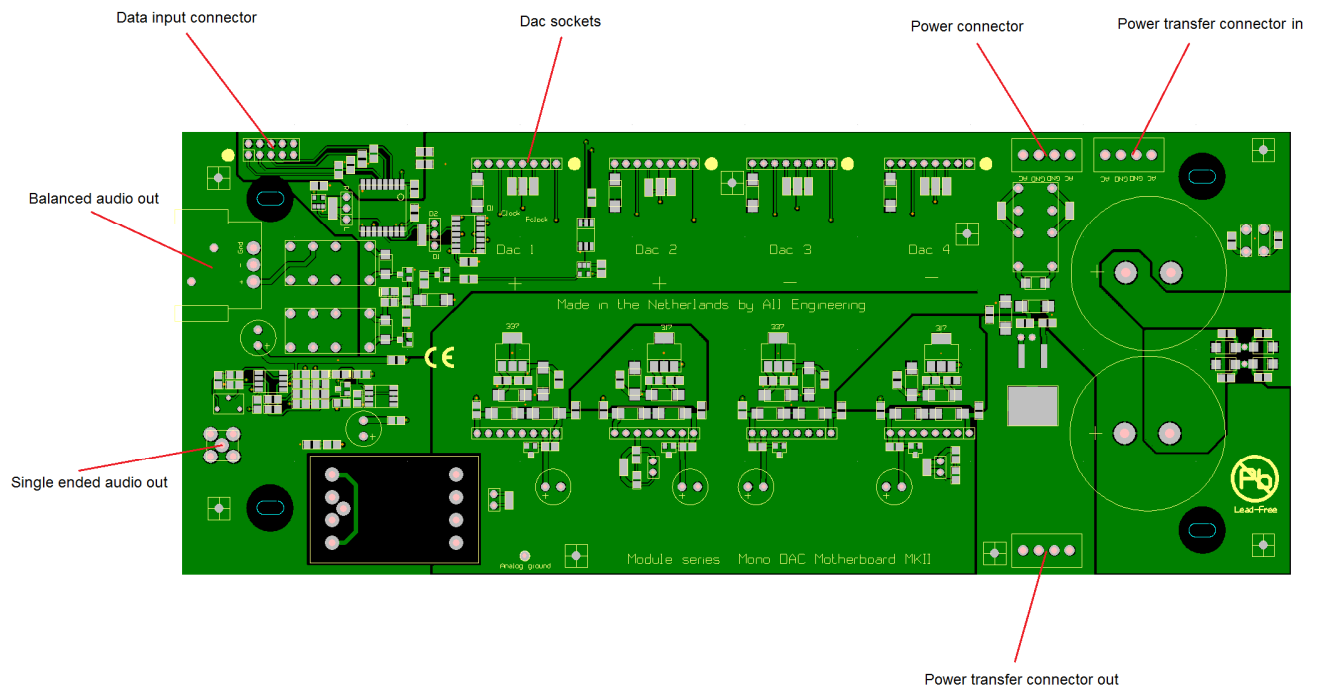
Introduction

The "Mono Dac Motherboard" is the absolute high end solution to create a dac system. Two boards are needed to create a stereo system and several settings are available to match the board to your digital source. For instance I2S data coming from a CD player can be used as a digital source. Four "Dac One" or "Dac Two" modules can be used to get optimal performance. The board can set for several audio input formats like RJ16, RJ24 or I2S. Both "DAI One" or "DAI Two" digital interface boards are optimized to control the "Mono Dac motherboards". Besides supplying the correct data streams, the power requirement for the dacs can be switched on or off. In conjunction with the "DAI One" having the "FPGA/DSP forward control interface" on top, the Mono Dac Motherboard can accept dual data streams to get the best linearity straight to -140dB. Just connecting the board to a transformer having two 10 – 12 VAC output windings and a ribbon cable between the DAI boards(or other digital sources) and the board is ready for use.



Deviation plot shows both 16 bit and 24 bit linearity plots by using the "Mono Dac Motherboard" in conjunction with the "DAI One" having the "FPGA/DSP forward correction module" on top. With 24 bits data linearity goes down without negligible deviation down to -140 dB.

Possible connections and settings

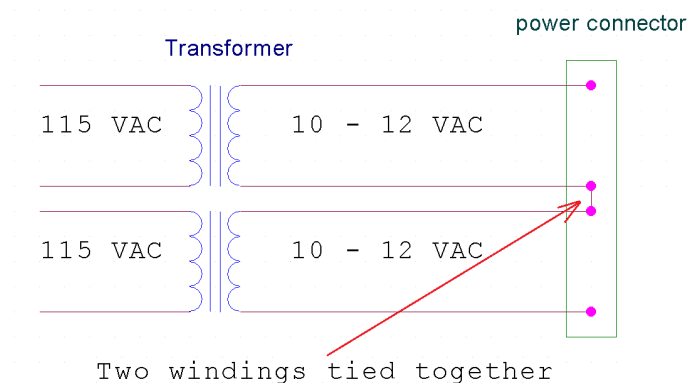


Power connection.

The power connection accepts 2x 10VAC as a minimum voltage. This voltage is based on optimal regulation of the voltage regulators. If necessary a dedicated transformer can be delivered, having both 115 Volts and 230 Volts primary windings and both 10 Volts secondary windings. The use of an alternative 2x 12 Volt creates more heat but has no further advantages. Total power consumption is max 7 Watts so the use of a 15VA transformer will be convenient.



The "Mono Dac Motherboard" module will connect both secondary windings together so watch the polarity of both windings to avoid damage to the transformer!!



Power transfer connectors

The power transfer connector can be used to connect a second transformer as outgoing secondary wires are too short. At the other side of the board a second connector is situated to supply the second "Mono Dac Mother board".

Power relay option

In conjunction with our "DAI" digital interface boards, the board can be switched on and off via the data input connector.

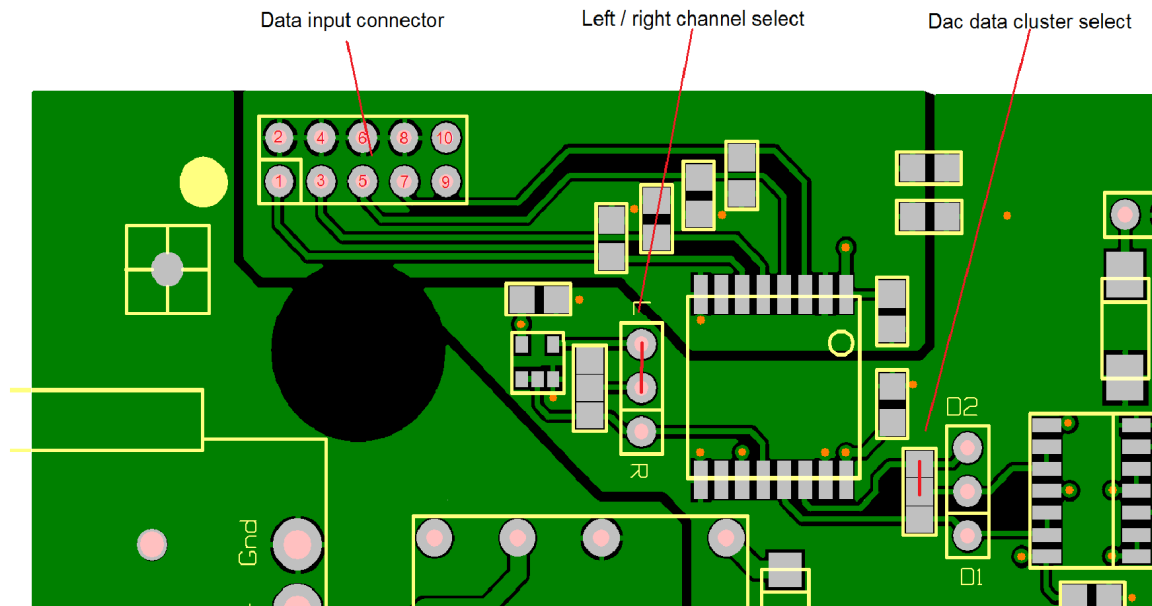
Dac module sockets

The "Mono Dac Motherboard" will be delivered with four dac slots which are compatible with both Dac One or Dac Two modules.



By placing the dac in 180 degrees position you will create a permanent damage to both mother board and dac modules!!

Data input



The data input has the following connections:

- pin 1 Clock input.
- pin 2 Ground.
- pin 3 Frame Sync.
- pin 4 Ground.
- pin 5 Data 1 Input.
- pin 6 Ground.
- pin 7 Data 2 input.
- pin 8 Ground.
- pin 9 Power relay control line.
- pin 10 Power relay control line.

On every Transient device, pin "1" of the data connector is marked with a dot to avoid wrong installation of the ribbon cable.



Never turn the data connector for 180 degrees as it can damage connected devices!!

Left /Right channel select

With the "left /right channel select jumper" you can choose for which channel (left or right) the board should be configured.

D1 /D2 select jumper

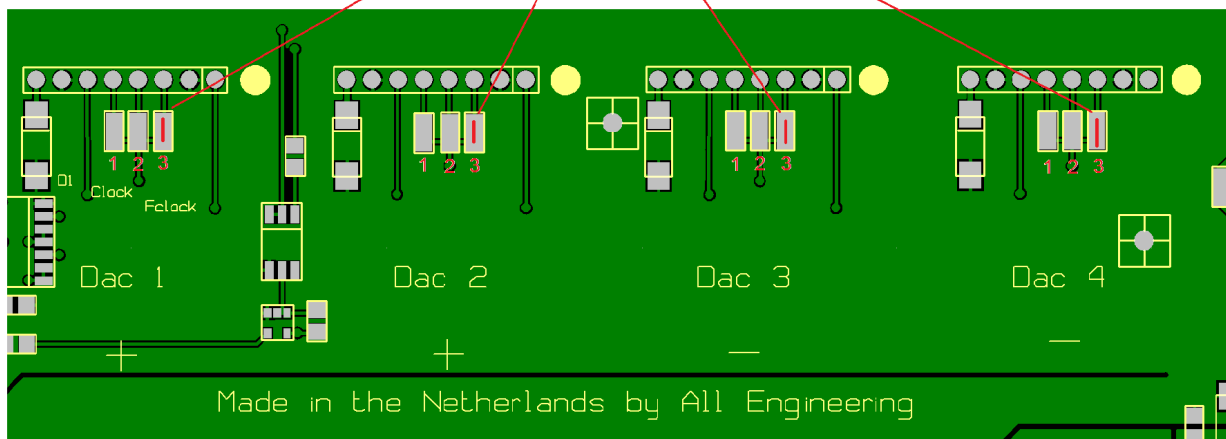
The default setting of the "D1/D2 select jumper" is "D1" and will sent standard data to all dac boards. The "D2" setting of this jumper can only be used in conjunction with the "DAI One" board having the "FPGA/DSP" option installed.

DAC jumper settings

The following dac jumper settings can be used:

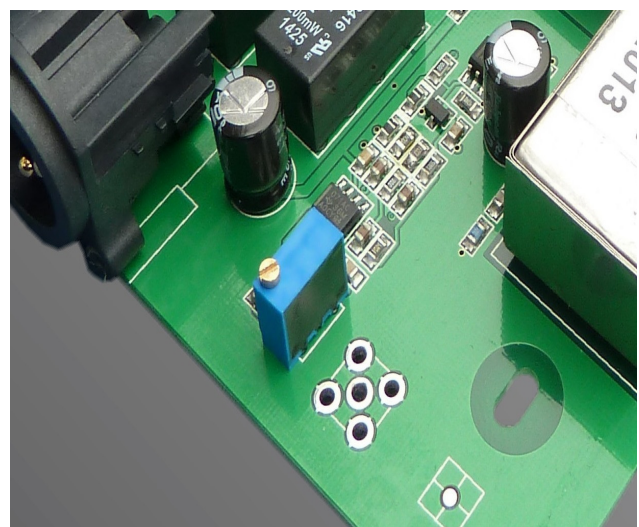
- 1 I2S
- 2 RJ24
- 3 RJ16 (also used if "FPGA/DSP" option is installed)

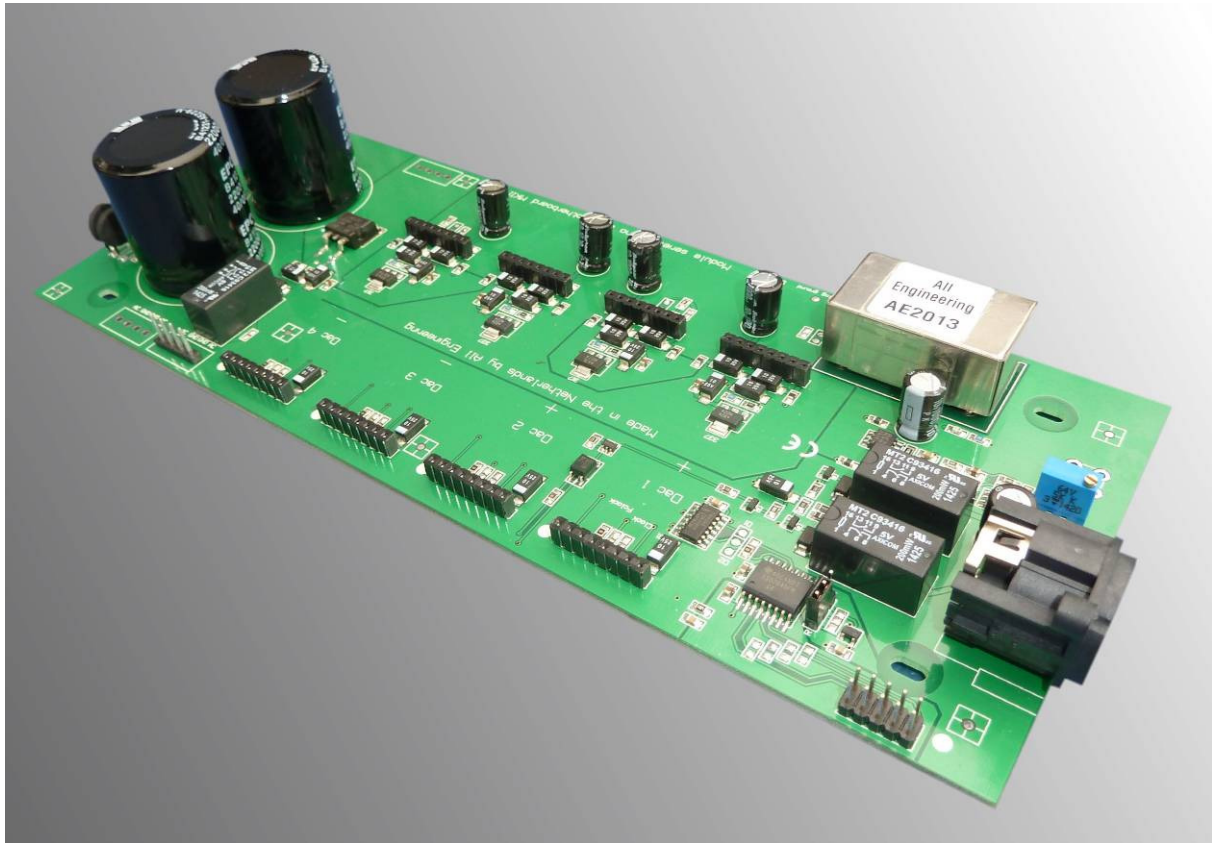
Use this jumpers if "FPGA / DSP forward correction module" is installed.



Single ended output offset adjustment

The single ended output section has its own Class A amplifier and has an output impedance of 100 Ohms. To get lowest DC offset a DC servo circuit is added. During production the offset was adjusted for 0 mV (± 5 mV deviation) Normally no adjustment should be needed however, if necessary the offset can be checked or adjusted. Aware that no digital data is supplied. Connect your digital voltmeter to the single ended output and measure the DC offset. If necessary you can adjust the multi turn pot meter until the DC voltage is reduced to a minimum.





The "Mono dac Motherboard" will be delivered without options , audio connectors or dac modules.

Special OEM versions of the Mono Dac Motherboard

In case of quantities of 50+ , the board can have your own logo and pcb color.

Specifications

Description.	Full balanced Mono DAC Motherboard.
Power requirements.	2x 10 -12 VAC
Power consumption.	less than 4 Watts with dac modules installed
Recommended transformer.	10VA or more. A dedicated power transformer of 15VA is available for global use.
Data input standards.	I2S ,RJ24,RJ16
Analog output	2 Volts RMS at single ended output. 4 Volts RMS at balanced output.
Muting circuit	Analog outputs available after four seconds. Will mute immediately if control data is switching on standby. (option only with DAI One or DAI Two)
Size.	250 x 100 mm

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