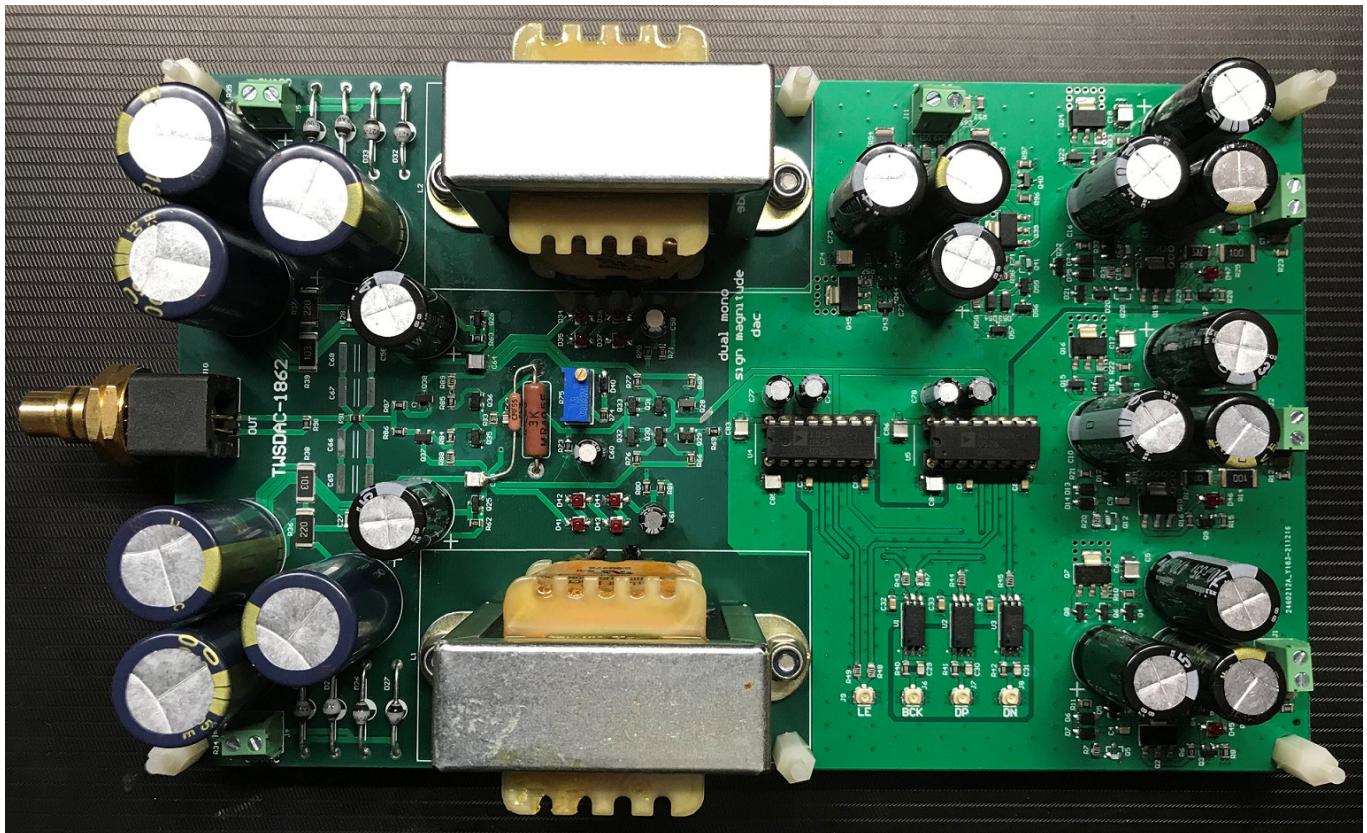


# TWSDAC-1862 The Well Segmented Digital to Analog Converter - Dual mono AD1862



AD1862 dual mono sign magnitude architecture digital to analog converter with built-in I/V converter.

## Features:

**Inputs:** 20 bit custom protocol (provided by the TWSAFB-LT FIFO buffer)

**Format:** up to 20 bit 384kHz

**Architecture:** dual AD1862 with sign magnitude architecture

**Clock mode:** stopped clock

**Master clock:** 5.6448/6.144 MHz up to 176.4/192KHz, 11.2896/12.288 MHz up to 352.8/384 KHz

**Isolation:** Full optical isolation

**Output:** 1.9V rms, zero feedback discrete current to voltage converter (DC coupled)

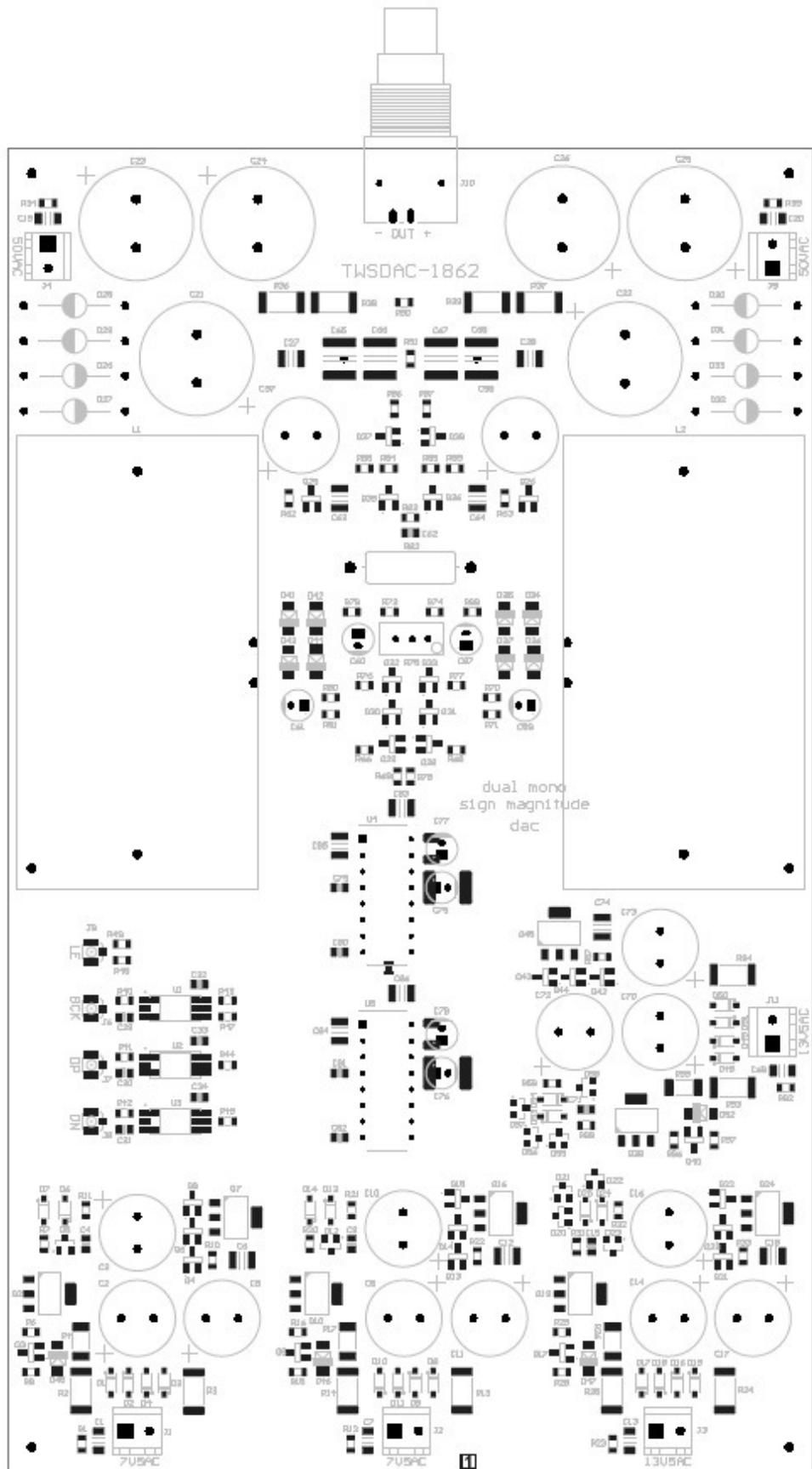
**Power supply:** 4 shunt regulators for the DAC section (+/- 5VDC digital, +/-12VDC analog), inductive power supply for the I/V section (+/-20VDC).

**Suitable transformer:** 30VA, 7.5VAC/300mA x 2, 13.5VAC/350mA x 2, 50VAC/160mA x 2

**Board size:** 127 x 209 mm

**Note:** finished board without DAC chips, chokes and I/V conversion resistor (mono)

## PCB layout



## **Connectors**

**J1:** AC Digital power supply (7.5VAC/300 mA)

**J2:** AC Digital power supply (7.5VAC/300 mA)

**J3:** AC Analog power supply (13.5VAC/350 mA)

**J11:** AC Analog power supply (13.5VAC/350 mA)

**J4:** I/V stage power supply (50VAC/160 mA)

**J5:** I/V stage power supply (50VAC/160 mA)

**J6:** bit clock input (connect to TWSAFB-LT FIFO buffer)

**J7:** data positive input (connect to TWSAFB-LT FIFO buffer)

**J8:** data negative input (connect to TWSAFB-LT FIFO buffer)

**J9:** latch enable input (connect to TWSAFB-LT FIFO buffer)

**J10:** Analog output

There is 1 available option for this board:

- finished mono board without DAC chips, chokes and I/V conversion resistor

## **Installing the missing components**

The I/V conversion resistor R82 is not installed because everyone has their own preferences on the type of resistor to use. The needed resistor value is 3K, 0.5W or 1W.

Suitable chokes to be used for L1-L2 are the Triad Magnetics C-3X (Mouser part 553-C-3X).

Two DAC chip are needed for each channel.

Two output options are available:

1. DC coupled. As supplied.
2. AC coupled. Remove R91, install C65-C66-C67-C68 (suitable part is the Rubycon 16MU226MD35750 Mouser part 232-16MU226MD35750, or the cheaper CDE 107BPA016M Mouser part 598-107BPA016M)

## **Settings**

Adjust the output offset: turn R75 to get 0V at the output.

## **Caution**

The board has a little DC offset drift. If your preamp/amp is DC coupled, AC coupled option is strongly recommended.