

TGDAC4 / TGGALVO (4 Channel DAC card)



CAUTION! On few early prototypes, at startup the card outputs will swing to -10Volts briefly. This may damage instruments that aren't designed to handle negative input.



TGGALVO card

The TGDAC4 is a versatile card capable of performing many different roles.

With the GALVO_SPIM firmware the card can replace a MicroMirror card(TGMM4). With the DAC outputs, it can connect to a 3rd party Scanner or Galvo amplifier. It presents as a Galvo to Micro-Manager and diSPIM plugin. The Voltage range can be adjusted with [Command:PM](#). All other operation is similar to the [MicroMirror Drive Card](#). The range of internal positions accessed via serial commands is also the same as the MicroMirror card: [-4000, 4000] - not in millivolts like the typical DAC card firmware - which position range then mapped to whichever output voltage range is set using the PM command.

With the PIEZO_DAC firmware the card can replace a Piezo drive card (TGADEPT). With the DAC outputs, it can control a 3rd party piezo amplifier. It presents as a Piezo device to Micro-Manager and diSPIM plugin. The Voltage range can be adjusted with [Command:PM](#). All other operation is similar to the [Piezo drive card](#)

With the SIGNAL_DAC firmware the card behaves like a Signal generator. User can set the output voltage directly in millivolts. It can generate periodic waveforms with [Single-axis functions](#) and arbitrary waveforms with [RING BUFFER Multi-Point Save/Move](#) modules. It presents as a SignalIO device in Micro-Manager(Supported by Micro-Manager version 1.4.23 night builds 9/4/2019 and after). Unlike the other firmware, the voltage range in this firmware is adjusted [Command:PR](#).

Overview

- TGDAC4 has four 12 bit DAC onboard with 4 kHz refresh rate.
- Has TTL pins connected to TG-1000's backplane, so it can sync with other cards in the TG-1000 controller.
- Multiple DAC output voltage modes are available. Like 0V to 2.048V, 0V to 4.096V, 0V to 10.24V, -1.024V to 1.024V, -2.048V to 2.048V, -5.128V to 5.128V and -10.24V to 10.24V.
- Can output a maximum of 10ma per channel.
- 100 ohm resistor in series at BNC output
- 5th order programmable Bessel filter is present on each DAC channel to filter out DAC aliasing effects. Set with the [Command:BACKLASH \(B\)](#)
- Can be configured to drive a Galvo amplifier, Piezo amplifier and other devices that can accept an analog voltage input.

[manual](#), [tiger](#), [micromirror](#), [galvo](#), [dac](#), [piezo](#)

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