Twisted Pear “COD” PCM1794A Current Output DAC.

Version 2.0

Overview:
The “COD” is a DAC module designed around the well regarded TI PCM1794A chip. It is designed for either direct current output where I/V conversion is done externally or simple resistive I/V. While passive I/V will work very well, active I/V is strongly suggested because performance is significantly better with low impedance active I/V.

Power Supplies:
The COD has two on-board LDO voltage regulators. One 3.3V regulator for the digital supply, and one 5V regulator for the analog supply. The power supply (or supplies) for VA and VD can be separate or the same. 7.5VDC input is recommended for both VA and VD. If you wish to use just a single supply, simply run a short wire from the VA terminal to the VD terminal, then wire your supply to either VA or VD with one voltage input wire and one GND wire coming from your supply.

Switch Settings:
The COD has four tristate switches to configure the DAC. The DAC must be reset (or power cycled) in order for a configuration change to take effect. Only the recommended settings are covered here. Other configurations are possible. Refer to the PCM1794A data sheet if you wish to experiment. In order to insure the widest possible compatibility with our other modules it is recommended that the DAC be configured to accept 24-bit I2S PCM input as indicated below.

Recommended Stereo Configuration:

MONO	0
CHSL	0
FMT0	0
FMT1	0

Recommended Mono Configuration:

MONO	1
CHSL	0 for Left channel, 1 for Right channel
FMT0	0
FMT1	0

Analog Output:
To use an active I/V stage you must install jumpers J1-J4. If you with to use the on-board resistive I/V you should omit the jumpers and install resistors R1-R4. In MONO mode the selected analog signal is reversed on the non selected side. So for example, if LEFT MONO mode is selected (CHSL=0) then RIGHT– output is actually LEFT+ output and RIGHT+ is actually LEFT-.

Digital I/O Headers:
Advanced users will find an I/O header with for DEM, MUTE,RESET, and GND. This allows for control over those pins. In particular some people may want to use the DEM pin to apply deemphasis from and external flag, such as would come from a receiver module.

PCM Input:
PCM (I2S as shown above) is input via the PCM terminal block. BCK is the bit clock. SCK is the system, or master clock. LRCK is the LEFT/RIGHT clock. DIN is the PCM data input. GND is digital GND.