

# PmodDA2 Programmer's Reference Manual

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## Introduction

This document describes the programming interface to the PmodDA2 library that is included as part of the PmodLib library. It describes the capabilities of the PmodDA2 library and all the API functions used to access its features.

The purpose this library is to offer access to the PmodDA2 for the Cerebot 32MX4 or 32MX7 microcontroller. This will allow for the transfer of 12-bit digital to analog signals from either of these microcontrollers.

## PmodDA2 Basic API Functions

**void PmodDA2Init(SpiChannel chn,uint32\_t pbClock,uint32\_t bitRate)**

### *Parameters*

SpiChannel chn - spi channel initialize  
uint32\_t pbClock - peripheral bus clock in Hz  
uint32\_t bitRate - bit rate desired in Hz

### *Return Value*

none

This function initializes the spi channel specified by chn to allow for communication with the PmodDA2 at the specified bit rate.

**void PmodDA2Enable(SpiChannel chn)**

### *Parameters*

SpiChannel chn - spi channel the PmodDA2 is connected to

### *Return Value*

None

This function enables the spi channel specified by chn

**void PmodDA2Disable(SpiChannel chn)***Parameters*

SpiChannel chn - spi channel the PmodDA2 is connected to

*Return Value*

None

This function disables the spi channel specified by chn

**void PmodDA2Send(SpiChannel chn, uint16\_t data);***Parameters*

SpiChannel chn - spi channel

uint\_16 data - the digital representation of the analog signal to send to the PmodDA2

*Return Value*

none

This function divides up the 2-byte value into two separate bytes and then transmits them over the spi channel chn to the PmodDA2.

**PmodDA2 Additional Information**

The PmodDA2 utilizes two National Semiconductor DAC121S101 12-bit DAC's. More information about how to access features of the PmodDA2 can be found in the data sheet for the DAC121S101 [here](#) and Digilent PmodDA2 Reference Manual.

For code examples please see the RecorderDemo project.