PmodMic Programmer's Reference Manual

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Introduction

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

The purpose this library is to offer supporting functions for interfacing with the PmodMic hardware on either the Cerebot 32MX4 or 32MX7 microcontroller. See the Digilent PmodMIC Reference Component for detailed information on operation and signaling.

PmodMic Basic API Functions

void PmodMicInit(SpiChannel chn, uint32_t pbClock,uint32_t bitRate)

Parameters
SpiChannel chn – SPI channel associated with PmodMic
Uint32_t pbClock – peripheral bus clock frequency in Hz
uint32_t bitRate - bit rate desired in Hz

Returns
none

This function opens the desired SPI channel in 8-bit mode as a master, enables the slave select bit, and sets the desired bit rate as a function of pbClock/bitRate. Examples of peripheral bus bit rate combinations are available in the PIC32 Family Reference Manual.

uint16_t PmodMicGetData(SpiChannel chn)

Parameters
SpiChannel chn – SPI channel associated with PmodMic

Returns
uint16_t - 12bit value polled representing audio data

This function sets the SPI slave select high and then transfers two 8-bit values from the PmodMIC and puts then back together as a single 16-bit word. Only 12-bits of which actually contain relevant data.