# Datasheet

AudioCODEC Module

RS Product Code: 754-1974

DESIGNSPARK

Introduction

The Synergy AudioCODEC module converts stereo analogue audio signals to and from a single digital signal utilizing the I^2S protocol. It is designed to work with an mbed LPC1768 microcontroller module (RS Product Code: 703-9238). The AudioCODEC module is packaged in a convenient form factor for rapid prototyping using the popular TLV320AIC23B audio CODEC chip from Texas Instruments. Using industry standard I^2C/SPI for control and I^2S for data transfer, the TLV320AIC23B is capable of both recording and playing back audio at a range of resolutions and sample rates. Although designed for use with the Synergy AnimatronicLab board (RS Product Code: 754-1965), it will also plug into a standard breadboard and work with any microcontroller supporting I^2S audio and I^2C or SPI serial communication.
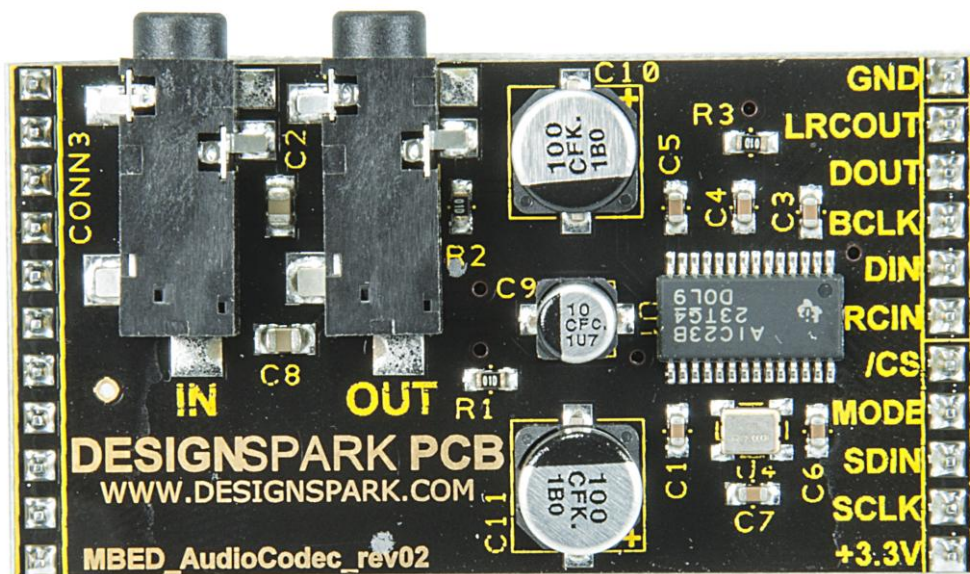
Features

- 90dB SNR Multibit Sigma-Delta ADC

- 100dB SNR Multibit Sigma-Delta DAC

- 8kHz to 96kHz sampling frequency support

- I^2C & SPI pin-selectable serial port for control: I^2C used with AnimatronicLab board

- Standard I^2S, MSB or LSB justified data transfers

- 16/20/24/32-bit word lengths

- 3.5mm stereo line input socket

- Integrated programmable gain amplifier

- 3.5mm stereo line output socket

- Analogue stereo mixer for DAC and analogue bypass

- Volume control with mute on input and output

- Power supply: +3.3Vdc

- Max current consumption: 26mA

- Dimensions: 43 x 28mm

Getting Started with the AudioCODEC module on mbed

http://mbed.org/cookbook/RS-Audio-Codec

I2S Slave library for mbed module

http://mbed.org/cookbook/I2S-Slave-Library

AudioCODEC Module & mbed Pin Assignments

AuC Pin	Function	mbed Pin
+3.3V	AuC power supply in	40
SCLK	I^2C serial clock	10
SDIN	I^2C serial data	9
MODE	I^2C/SPI select, I^2C = 0, SPI = 1	Gnd
/CS	8-bit I^2C address, 34h = 0, 36h = 1	Gnd
LRCIN	Playback L/R word select	6
DIN	Playback I^2S data in	5
BCLK	I^2S bit clock	7
DOUT	Record I^2S data out	8
LRCOUT	Record L/R word select	29
GND	Gnd	Gnd