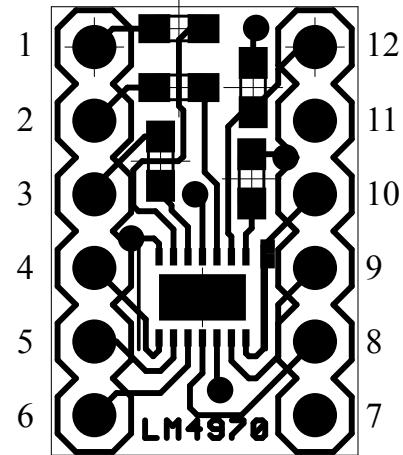


LM4970 Breakout

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1 Overview

This breakout board is designed to allow use of the LM4970 audio synchronized LED driver IC from National Semiconductor without the use of a custom made PCB and reflow soldering / solder paste. Included in the board are the input isolation, decoupling and low pass capacitors.

2 Hardware Description

The board is a direct breakout of the pins of the LM4970 - with the addition of 3 AC coupling capacitors for the Left/Middle/Right channels, a low pass filter capacitor, and a decoupling capacitor.

The board is too small to have pin names or numbers written on it, so the following diagram is provided. The board is numbered like a standard 12 pin dip IC. Pin 1 is nearest the end, near the capacitors.

Pinout:

1 Right Audio	12 VDD
2 Mono Audio	11 I2C VDD
3 Left Audio	10 LED1
4 SDA	9 LED2
5 SCL	8 LED3
6 ADR	7 GND

3 Software Requirements

Before any output will be visible on the LEDs, the LM4970 needs to be initialized via the I²C bus.

The LM4970 is somewhat odd compared to other I2C devices in that it may only be written to, and the register that is written to is determined by the high 2-3 bits of the value being written.

The transaction that we use for our inhouse testing is:

```
START 0xF4 0x04 0x50 0x60 0xBF 0xF2 STOP
```

The first 0xF4 byte is the WRITE command for the LM4970.

See the LM4970 datasheet for more information.