

Description

The ISL54406EVAL1Z evaluation board is designed to provide a quick and easy method for evaluating the ISL54406 Click and Pop Eliminator IC.

The ISL54406 device is a unique IC. To use this evaluation board properly requires a thorough knowledge of the operation of the IC. Refer to the data sheet (FN6578) for an understanding of the functions and features of the device. Studying the device's truth table along with its pinout diagram on page 2 of the data sheet is the best way to get a quick understanding of how the part works.

A picture of the evaluation board is shown in Figure 1. The ISL54406 μ TQFN IC is set in a socket on the evaluation board. It is located in the center of the board and is designated as U1.

The ISL54406 IC is a dual SPST analog switch that has four modes of operation: Audio, Mute, Click and Pop, and Shutdown (SHDN) mode. The evaluation board contains standard RCA/BNC connectors and a single headphone jack to allow the user to easily interface with the IC to evaluate its functions, features, and performance in the four modes of operation. The evaluation board has selectable output loads of 20k Ω and 32 Ω resistors to simulate an audio amplifier pre-amp or stereo headphones. The board also has DC blocking capacitors at the switch input to remove the DC bias of single supply amplifiers.

This application note will guide the user through the process of configuring and using the evaluation board to evaluate the ISL54406 device for Click and Pop elimination and Audio Muting applications.

Features

- Selectable Output Resistive Loads and Input DC Blocking Capacitors
- RCA Audio Input/Output Jacks, Stereo Headphone Output Jack and BNC Connectors
- Convenient Test Points and Connections for Test Equipment
- Click and Pop Elimination Circuitry
- High Off-Isolation Audio Muting

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Picture of Evaluation Board (Top View)



FIGURE 1. ISL54406EVAL1Z EVALUATION BOARD

Board Architecture/Layout

Basic Layout of Evaluation Board

Refer to Figure 1 and the Board Schematic at the end of this manual. The basic layout of the main board is as follows:

Power (J1), Ground (J2), logic SEL1 (J9/J10) and logic SEL2 (J3/J4) connections are located at the top of the board. Audio Input BNC/RCA connectors are at the right side of the board for LIN input (J11/J12) and RIN input (J13/J14).

Note: The audio inputs have a 200 μ F series DC blocking capacitance that can be used for AC-coupling audio signals that are DC biased in single supply systems. If the audio source is not DC biased, it is recommended to bypass the capacitors (C3 to C6) by placing a jumper on JP6 for LIN and JP7 for RIN. Note that if the audio source already has a DC blocking capacitor, it is recommended to bypass the capacitor on the evaluation board, otherwise this will increase insertion loss. The capacitance can be reduced to 100 μ F by depopulating the 0 Ω resistor on R₆ and R₇.

Audio output RCA/BNC connectors are on the left side of the board labeled LOUT output (J5/J6) and ROUT output (J7/J8). In addition, the left and right outputs are also connected to the stereo headphone jack HJ1. Selectable load resistances are available on the evaluation board. When jumpers JP2 and JP3 are in the 1-2 pin position, the load is 20k Ω and in the 2-3 position the load is 32 Ω . The load can be bypassed by removing the jumpers altogether.

Located in the center of the board is the ISL54406 IC (U1). The socket for the IC has a pin 1 dot to show how the IC should be oriented on the socket. The IC pin 1 indicator dot needs to be aligned with the socket pin 1 indicator dot that is visible when the socket is unlatched.

Intersil Corporation reserves the right to make changes in circuit design, software and/or specifications at any time without notice. Accordingly, the reader is cautioned to verify that the Application Note or Technical Brief is current before proceeding.

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