I²S interface board

Quick start guide

About this document

Scope and purpose

The I²S interface board is an add-on board intended for use with the EVAL_AUDIO_MA12040P and EVAL_AUDIO_MA12070P boards. The I²S interface board converts either analog or digital S/PDIF audio into I²S format matching the default settings of EVAL_AUDIO_MA1240P/MA12070P boards. The I²S interface board should be used when the user has no I²S source for the EVAL_AUDIO_MA1240P/MA12070P boards.

Intended audience

Audio amplifier design engineers, audio system engineers and audio software engineers.

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1 Board block diagram and schematic

The I²S interface board is an add-on board for the EVAL_AUDIO_MA12040P/MA12070P boards. A block diagram of the board is shown in **Figure 1**. The board will get 3.3 V supply from the **board-to-board** connector when connected to an EVAL board, and no other supply voltage is needed to operate the board.

The triple-Pole Dual-Throw (3PDT) **switch** selects between the analog and the digital input.

To use the **analog to I²S converter** connect an audio source via the 3.5 mm jack connector.

To use the **S/PDIF to I²S converter** connect a digital audio source from either the RCA or the optical connector.

The **jumper** selects between the **RCA connector** and the **optical input** signal.

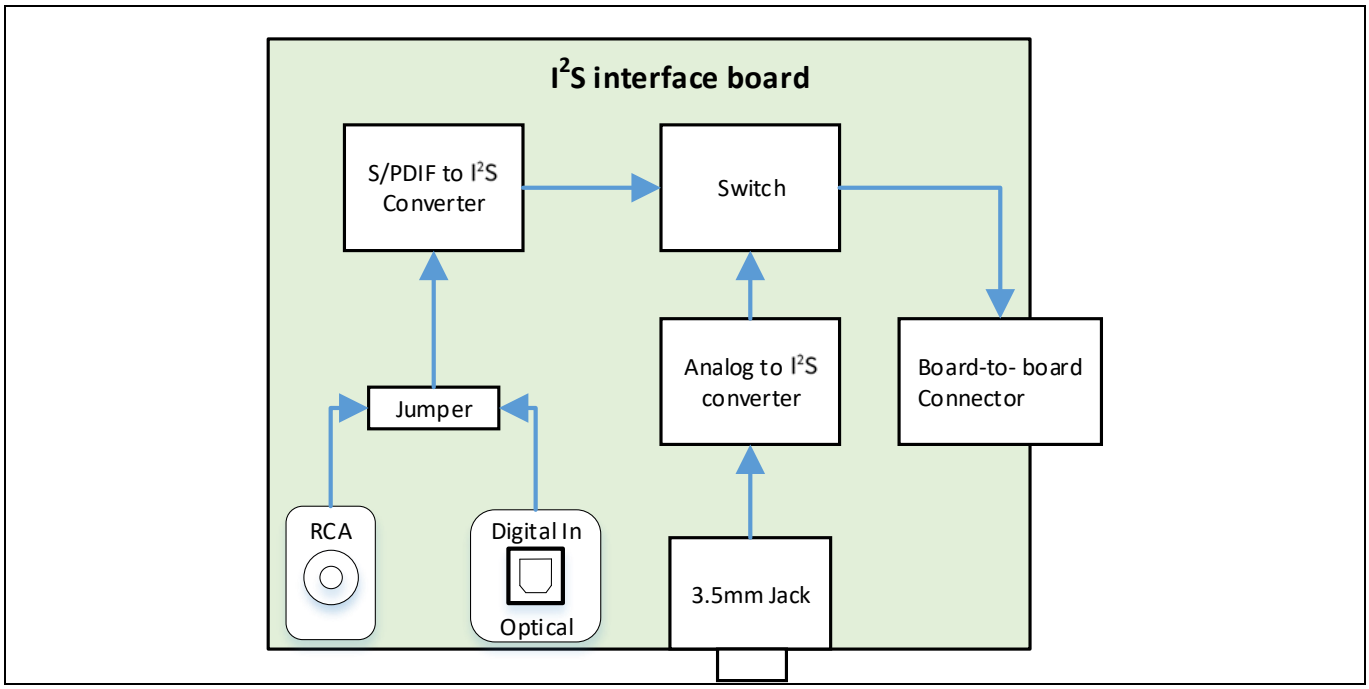


Figure 1 I²S interface board block diagram

For a schematic of the I²S interface board see **Figure 2**.

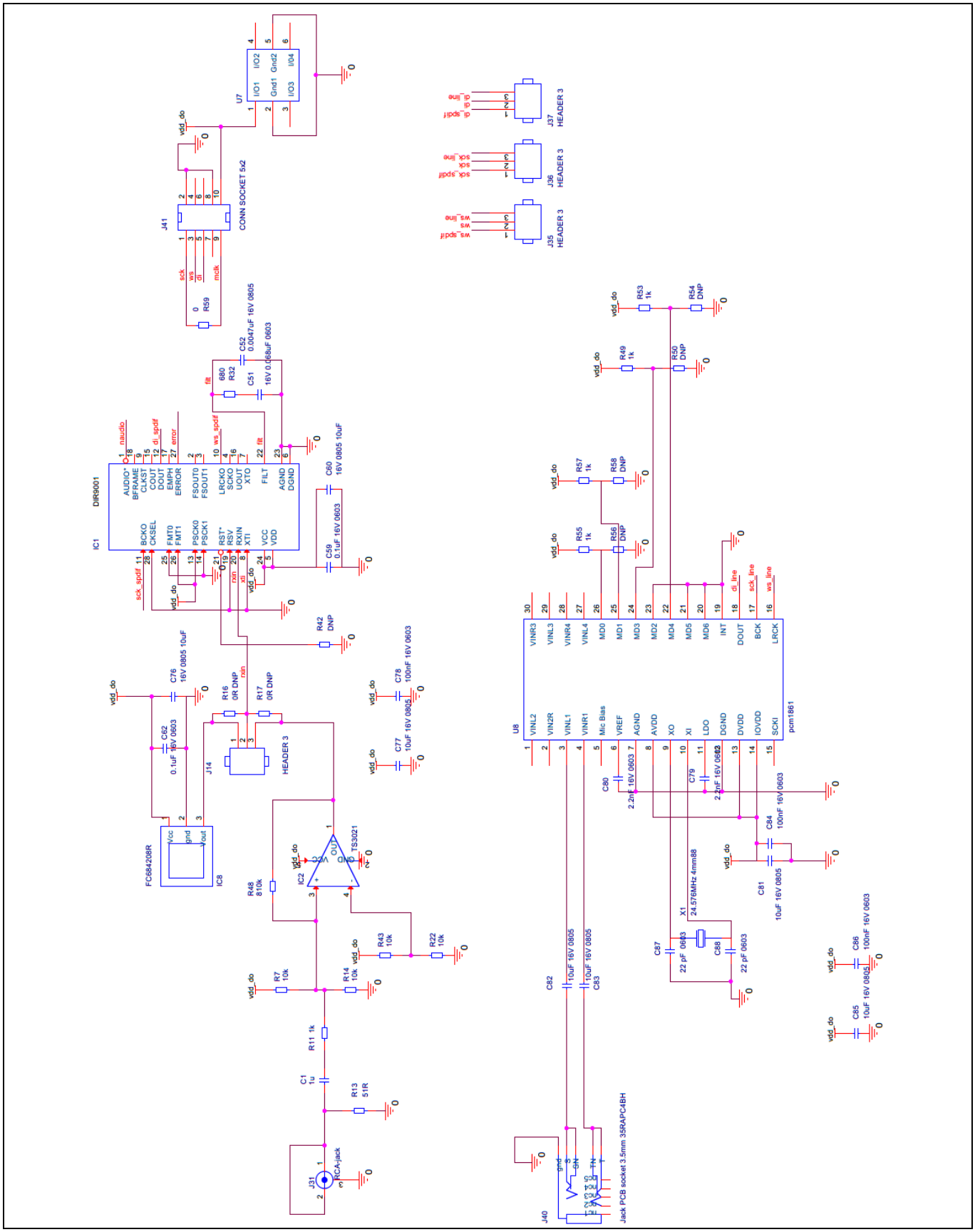


Figure 2 I²S interface board schematic

2 PCB board overview

For an overview of the PCB see **Figure 3**.

1) S/PDIFF to I²S converter
2) Switch to select analog or digital input
3) Board-to-board connector
4) Jumper to select RCA or optical connector
5) Analog to I²S connector
6) RCA connector
7) Optical connector
8) 3.5 mm jack connector

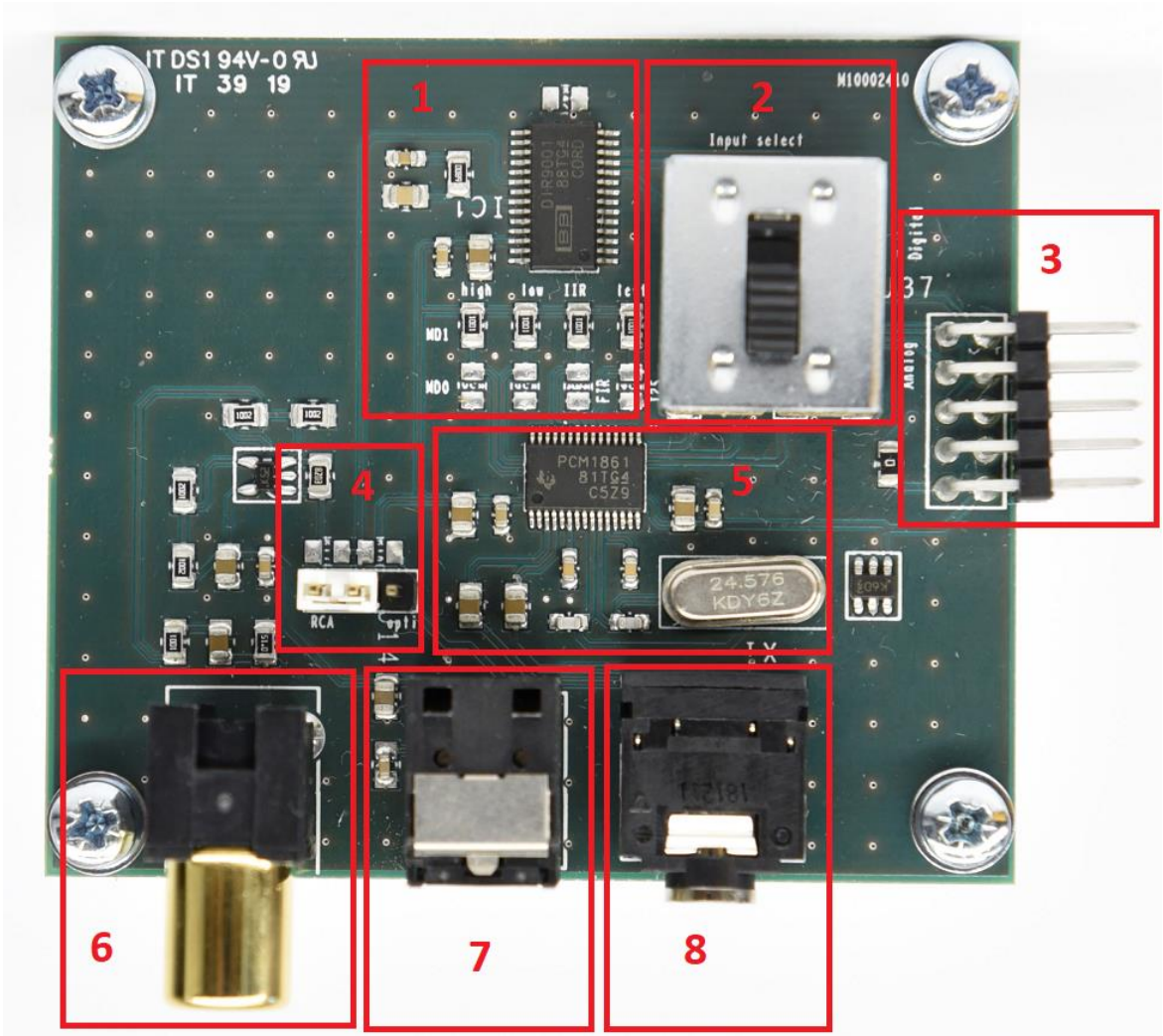


Figure 3 PCB board overview

3 Step-by-step user guide

1) Connect the power supply cables and speaker cables to the EVAL_AUDIO_MA12040P/MA12070P board. Do not turn on the power supply yet.
2) Disable and mute the MA12040P/MA12070P amplifier.
3) Connect the I²S interface board to an EVAL_AUDIO_MA12040P/MA12070P, see **Figure 4**.

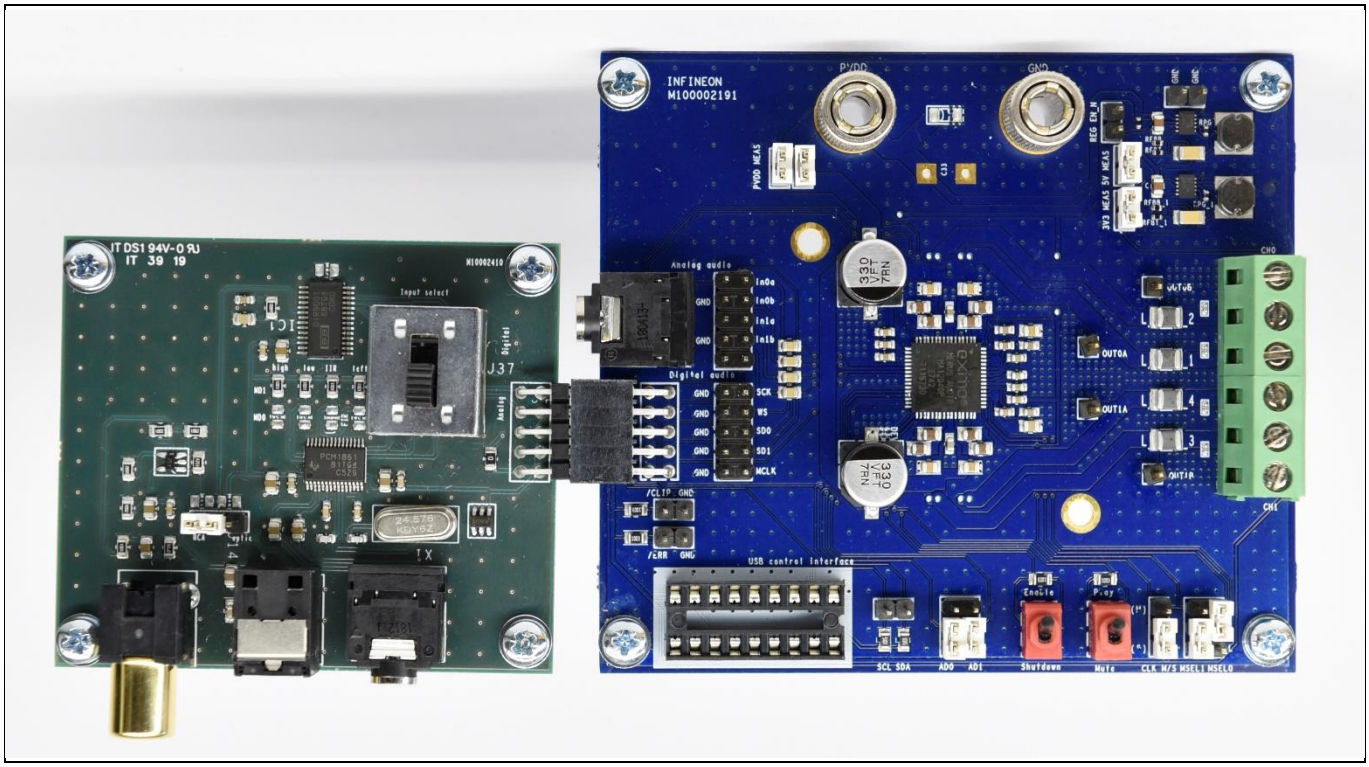


Figure 4 Step 3: connect the I²S interface board to the EVAl_ADIO_MA12040P/MA12070P

4) Connect the preferred audio input source: either RCA (S/PDIF), optical (S/PDIF) or analog (3.5 mm jack).
5) Use the switch to select analog or digital input. See **Figure 5**.
6) Use the jumper to select between RCA or optical cable.
7) Apply power to the EVAL_AUDIO_MA12040P/MA12070P.
8) Enable and unmute the EVAL_AUDIO_MA12040P/MA12070P.

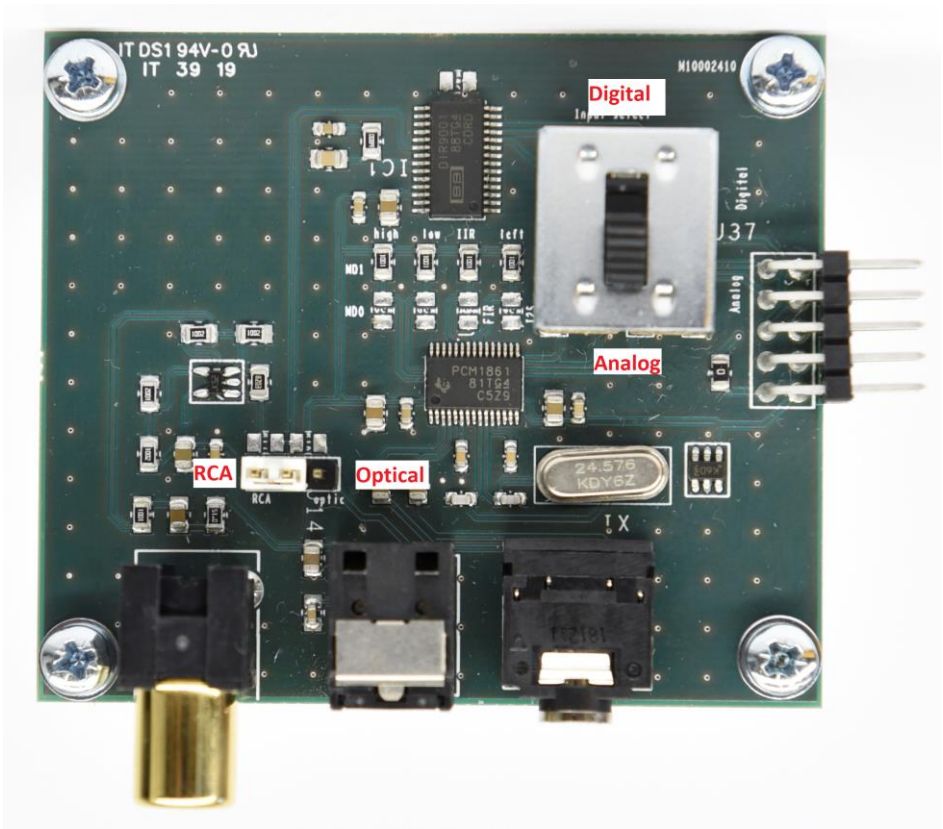


Figure 5 Switch and jumper select

Revision history

Document version	Date of release	Description of changes
V 1.0	2020-03-17	First release

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