

# I<sup>2</sup>S interface board

## Quick start guide

### About this document

#### Scope and purpose

The I<sup>2</sup>S interface board is an add-on board intended for use with the EVAL\_AUDIO\_MA12040P and EVAL\_AUDIO\_MA12070P boards. The I<sup>2</sup>S interface board converts either analog or digital S/PDIF audio into I<sup>2</sup>S format matching the default settings of EVAL\_AUDIO\_MA1240P/MA12070P boards. The I<sup>2</sup>S interface board should be used when the user has no I<sup>2</sup>S 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

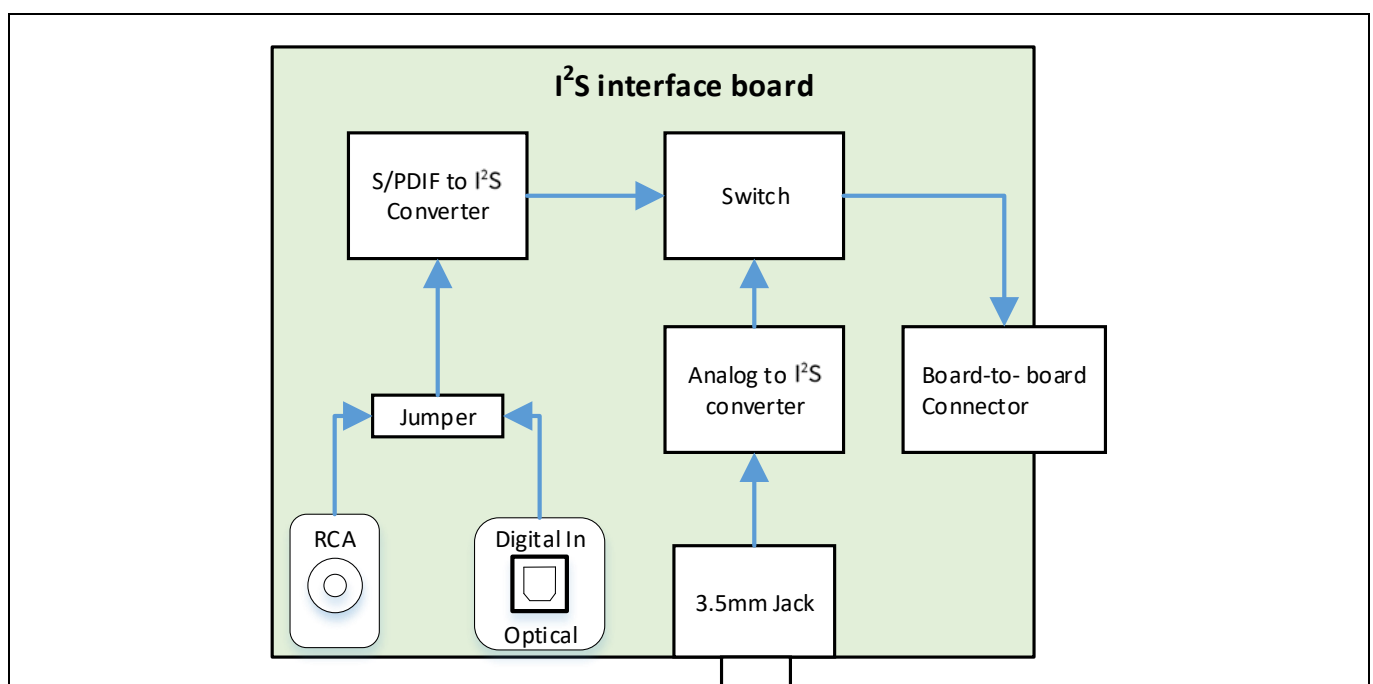
The I<sup>2</sup>S interface board is an add-on board for the EVAL\_AUDIO\_MA12040P/MA12070P boards. A block diagram of the board is shown in [Figure 1](#). The board will get 3.3 V supply from the **board-to-board** connector when connected to an EVAL board, and no other supply voltage is needed to operate the board.

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

To use the **analog to I<sup>2</sup>S converter** connect an audio source via the 3.5 mm jack connector.

To use the **S/PDIF to I<sup>2</sup>S 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** I<sup>2</sup>S interface board block diagram

For a schematic of the I<sup>2</sup>S interface board see [Figure 2](#).

# I2S interface board

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### Board block diagram and schematic

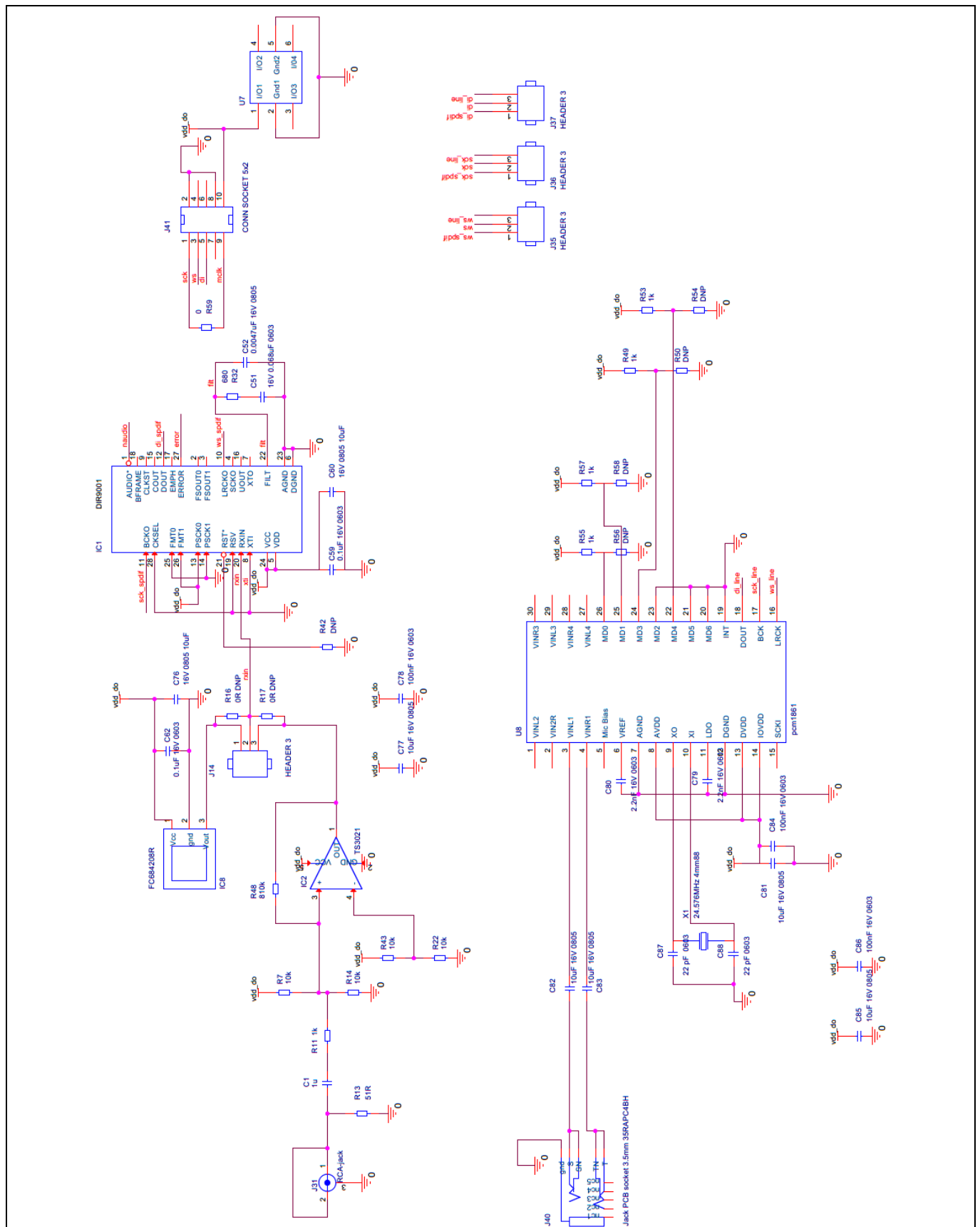
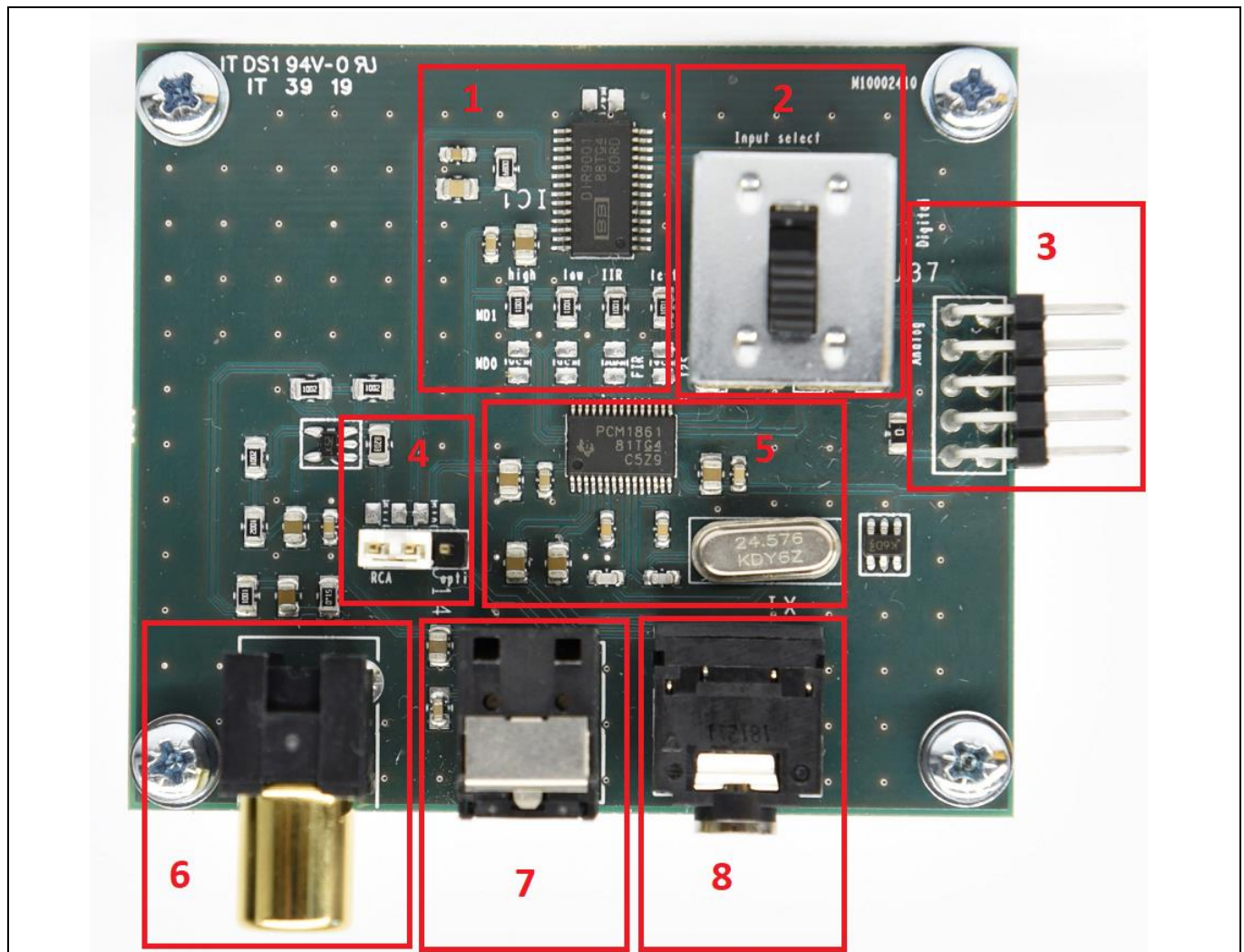


Figure 2 I<sup>2</sup>S interface board schematic

## 2 PCB board overview

For an overview of the PCB see [Figure 3](#).

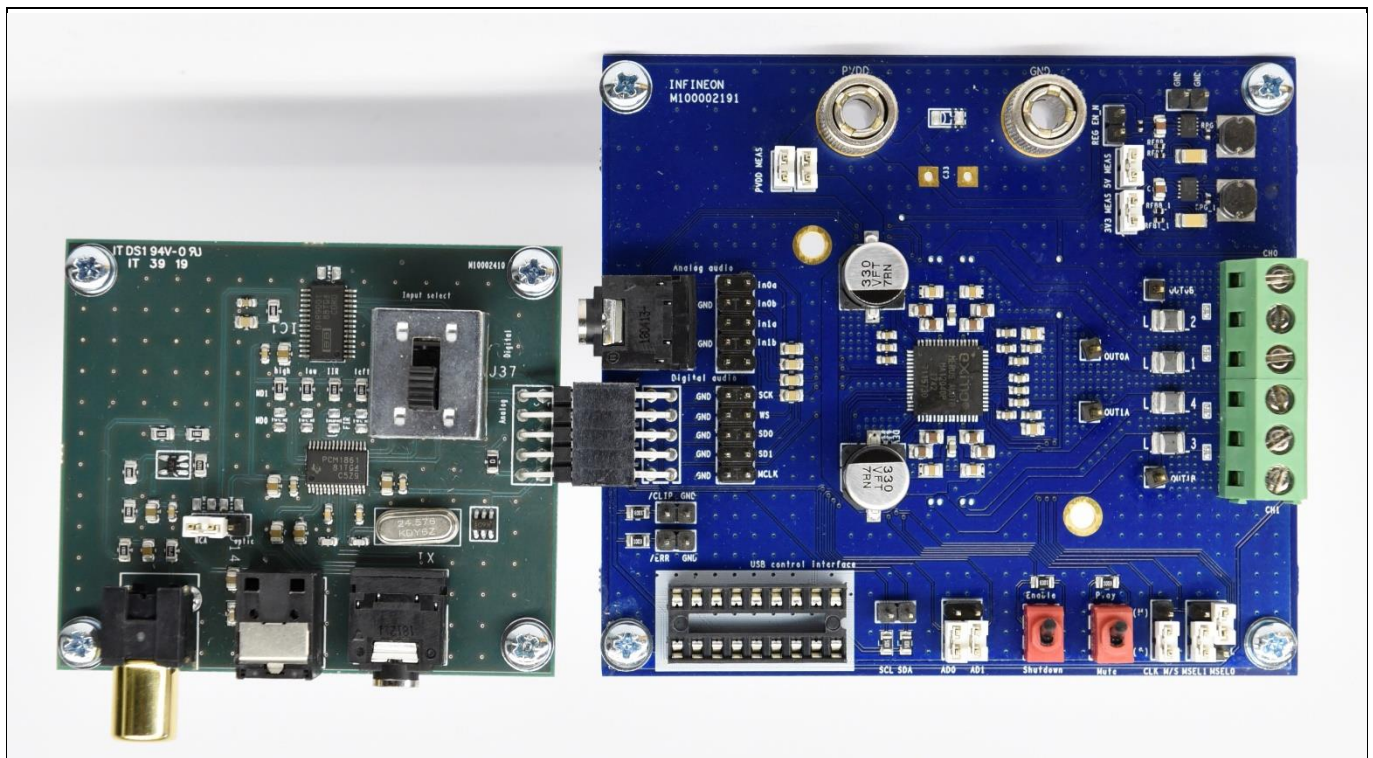
- 1) S/PDIFF to I<sup>2</sup>S converter
- 2) Switch to select analog or digital input
- 3) Board-to-board connector
- 4) Jumper to select RCA or optical connector
- 5) Analog to I<sup>2</sup>S connector
- 6) RCA connector
- 7) Optical connector
- 8) 3.5 mm jack connector



**Figure 3** PCB board overview

## 3 Step-by-step user guide

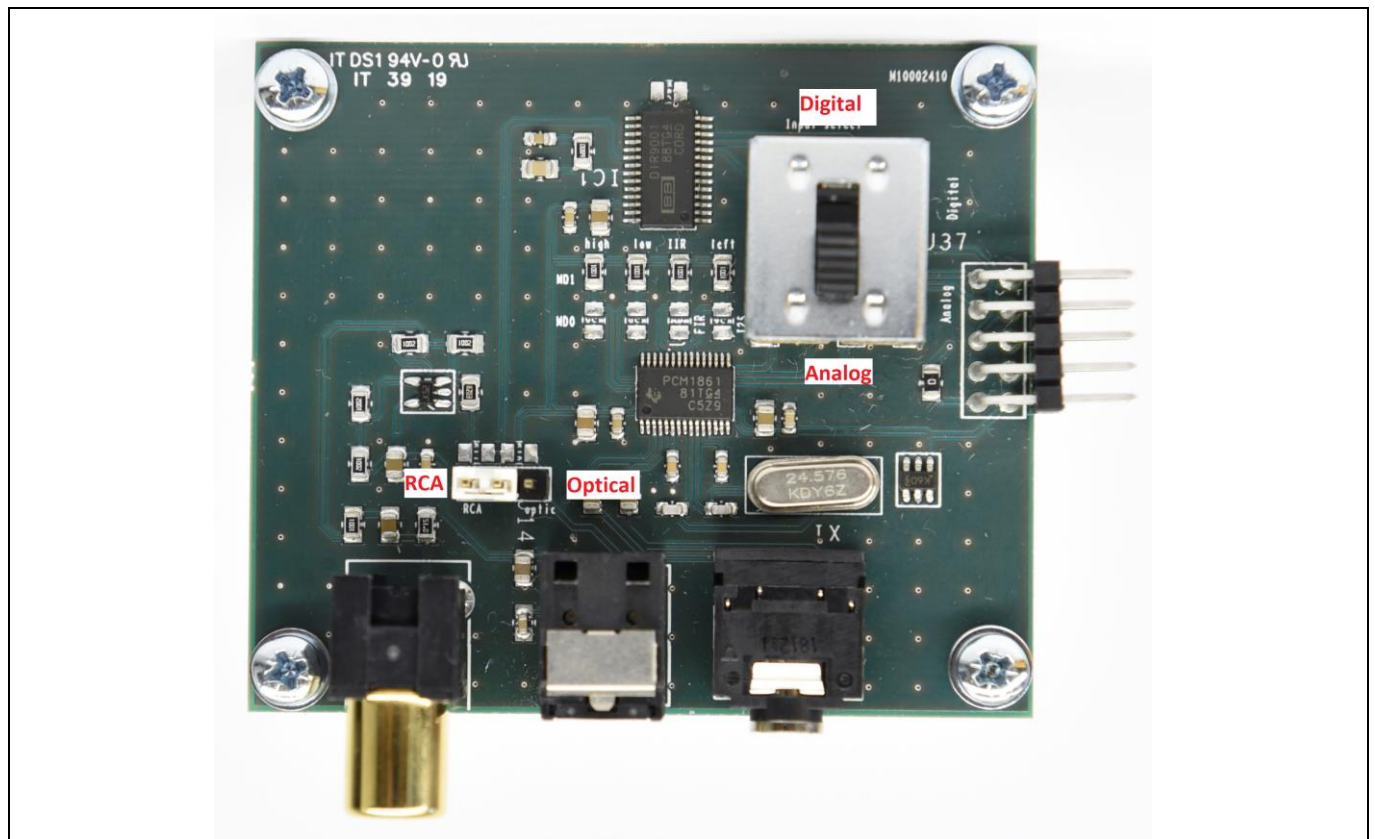
- 1) Connect the power supply cables and speaker cables to the EVAL\_AUDIO\_MA12040P/MA12070P board. Do not turn on the power supply yet.
- 2) Disable and mute the MA12040P/MA12070P amplifier.
- 3) Connect the I<sup>2</sup>S interface board to an EVAL\_AUDIO\_MA12040P/MA12070P, see [Figure 4](#).



**Figure 4** Step 3: connect the I<sup>2</sup>S interface board to the EVAL\_AUDIO\_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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