Analog Output MEMS Microphone Flex Evaluation Board User Guide

GENERAL DESCRIPTION

This user guide applies to the following MEMS microphone evaluation boards:

- EVAL-INMP401Z-FLEX
- EVAL-INMP411Z-FLEX
- EV_ICS-40300-FX

This is a simple evaluation board that allows quick evaluation of the performance of analog MEMS microphones in a package with a 4.72 mm × 3.76 mm footprint size. The small size and low profile of the flexible PCB enables direct placement of the microphone into a prototype or an existing design for an in situ evaluation. The evaluation board consists of a bottom port microphone soldered to a flexible PCB with color-coded wires attached. The only other component on the board is a 0.1 µF supply bypass capacitor. Table 1 describes the functions of the three connection wires. Table 2 describes the functional differences between the different microphones that are used with this flex circuit.

TABLE 1. PIN FUNCTION DESCRIPTIONS

Wire Color	Microphone Pin	Description
Red	VDD	Power Supply. 1.5 V to 3.6 V DC
White	OUTPUT	Analog Output Signal
Black	GND	Ground

TABLE 2. MICROPHONE FUNCTIONAL DIFFERENCES

Microphone	Sensitivity	Maximum Output Voltage
INMP401	−42 dBV	0.158 V rms
INMP411	−46 dBV	0.355 V rms
ICS-40300	−45 dBV	0.355 V rms

EVALUATION BOARD CIRCUIT

Figure 1 shows the schematic of the evaluation board, and Figure 2 shows the flex board layout. See the respective microphone data sheets for complete descriptions and specifications of the microphones.

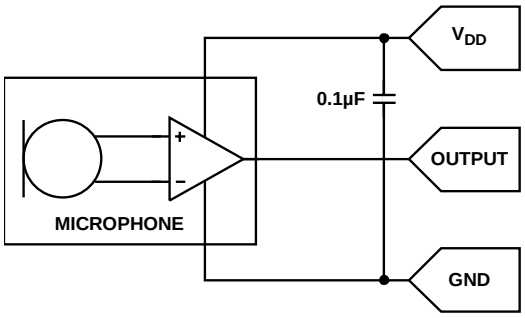


Figure 1. Evaluation Board Schematic

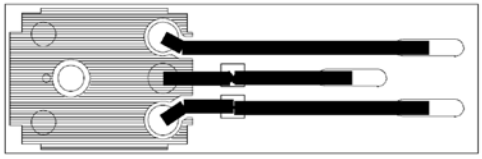


Figure 2. Evaluation Board Layout (Top View)

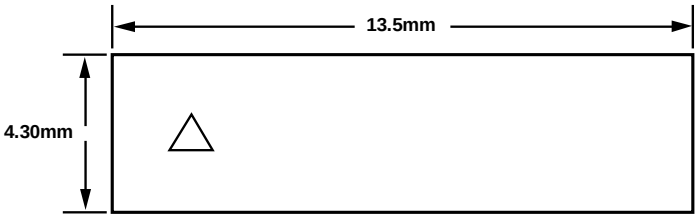


Figure 3. Evaluation Board Dimensions in Millimeters (Wires Not Included)

EVALUATION BOARD PHOTOGRAPH

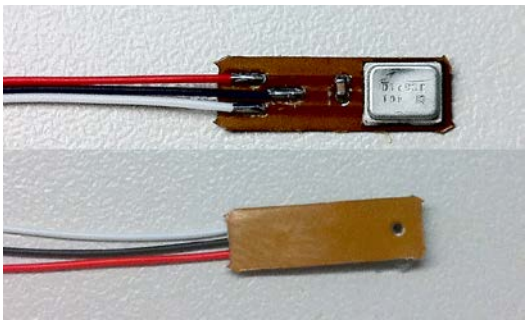


Figure 4. Top and Bottom View

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