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.

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.
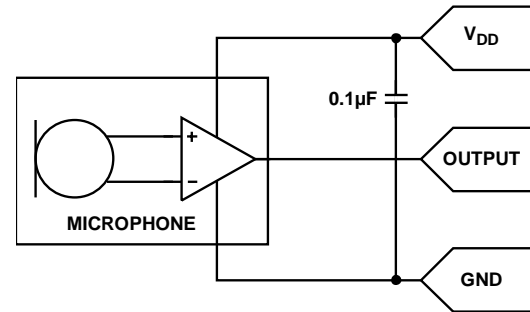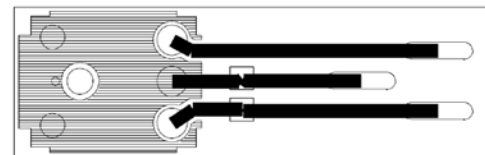

Figure 1. Evaluation Board Schematic

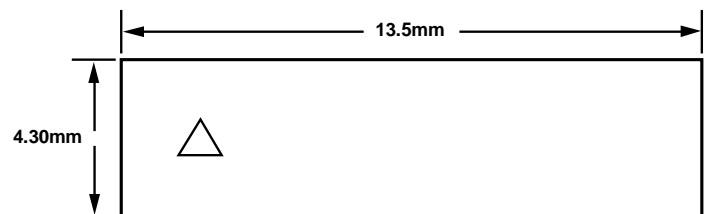**Figure 2. Evaluation Board Layout (Top View)**

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

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

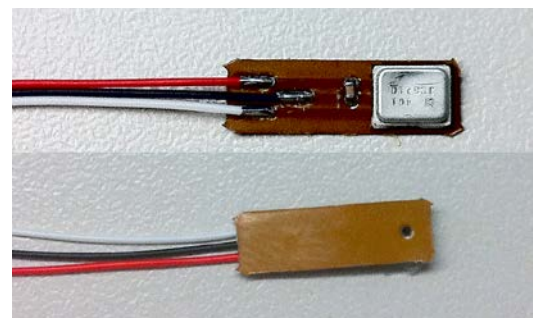## EVALUATION BOARD PHOTOGRAPH

Figure 4. Top and Bottom View

COMPLIANCE DECLARATION DISCLAIMER

InvenSense believes the environmental and other compliance information given in this document to be correct but cannot guarantee accuracy or completeness. Conformity documents substantiating the specifications and component characteristics are on file. InvenSense subcontracts manufacturing and the information contained herein is based on data received from vendors and suppliers, which has not been validated by InvenSense.

This information furnished by InvenSense is believed to be accurate and reliable. However, no responsibility is assumed by InvenSense for its use, or for any infringements of patents or other rights of third parties that may result from its use. Specifications are subject to change without notice. InvenSense reserves the right to make changes to this product, including its circuits and software, in order to improve its design and/or performance, without prior notice. InvenSense makes no warranties, neither expressed nor implied, regarding the information and specifications contained in this document. InvenSense assumes no responsibility for any claims or damages arising from information contained in this document, or from the use of products and services detailed therein. This includes, but is not limited to, claims or damages based on the infringement of patents, copyrights, mask work and/or other intellectual property rights.

Certain intellectual property owned by InvenSense and described in this document is patent protected. No license is granted by implication or otherwise under any patent or patent rights of InvenSense. This publication supersedes and replaces all information previously supplied. Trademarks that are registered trademarks are the property of their respective companies. InvenSense sensors should not be used or sold in the development, storage, production or utilization of any conventional or mass-destructive weapons or for any other weapons or life threatening applications, as well as in any other life critical applications such as medical equipment, transportation, aerospace and nuclear instruments, undersea equipment, power plant equipment, disaster prevention and crime prevention equipment.