

## Analog Output MEMS Microphone Flex Evaluation Board

### GENERAL DESCRIPTION

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

- [EVAL-ADMP404Z-FLEX](#)
- [EVAL-ADMP405Z-FLEX](#)
- [EVAL-ADMP504Z-FLEX](#)
- [EVAL-ADMP510Z-FLEX](#)

The EVAL-ADMPxxxZ-FLEX is a simple evaluation board that allows quick evaluation of the performance of analog MEMS microphones in a package with a 3.35 mm × 2.50 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        | V <sub>DD</sub> | Power Supply. 1.5 V dc to 3.6 V dc. |
| White      | OUTPUT          | Analog Output Signal.               |
| Black      | GND             | Ground.                             |

**Table 2. Microphone Functional Differences**

| Microphone | Maximum Supply Current | Maximum Output Voltage | Output Impedance | DC Offset |
|------------|------------------------|------------------------|------------------|-----------|
| ADMP404    | 250 μA                 | 0.18 V rms             | 200 Ω            | 0.8 V     |
| ADMP405    | 250 μA                 | 0.18 V rms             | 200 Ω            | 0.8 V     |
| ADMP504    | 225 μA                 | 0.18 V rms             | 200 Ω            | 0.8 V     |
| ADMP510    | 250 μA                 | 0.40 V rms             | 350 Ω            | 0.7 V     |

### 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.

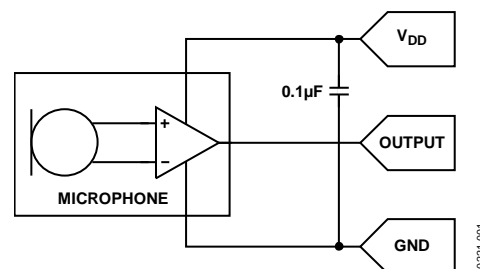


Figure 1. Evaluation Board Schematic

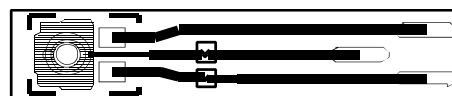


Figure 2. Evaluation Board Layout (Top View)

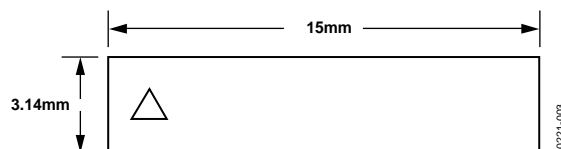


Figure 3. Evaluation Board Dimensions in Millimeters (Wires Not Included)

### EVALUATION BOARD PHOTOGRAPH

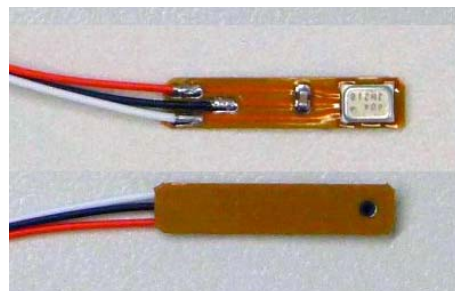


Figure 4. Top and Bottom View



## NOTES

**ESD Caution**

**ESD (electrostatic discharge) sensitive device.** Charged devices and circuit boards can discharge without detection. Although this product features patented or proprietary protection circuitry, damage may occur on devices subjected to high energy ESD. Therefore, proper ESD precautions should be taken to avoid performance degradation or loss of functionality.

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