

Differential Analog Output MEMS Microphone Flex Evaluation Board User Guide

GENERAL DESCRIPTION

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

- EV_ICS-40618-FX
- EV_ICS-40619-FX
- EV_ICS-40720-FX

This is a simple evaluation board that allow quick evaluation of the performance of differential output analog MEMS microphones. 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 four connection wires. Table 2 explains the functional differences between the two microphones and evaluation boards.

TABLE 1. PIN FUNCTION DESCRIPTIONS

| WIRE COLOR | MICROPHONE PIN | DESCRIPTION |
|------------|----------------|-------------------------------------|
| Red | VDD | Power Supply. 1.5 V dc to 3.6 V dc. |
| White | OUTPUT+ | Analog Output Signal + |
| Blue | OUTPUT- | Analog Output Signal - |
| Black | GND | Ground. |

TABLE 2. ICS-40720 SPECIFICATIONS

| Microphone | Sensitivity | Maximum Output Voltage | Output Impedance | Mic Port Location |
|------------|-------------|------------------------|------------------|-------------------|
| ICS-40618 | -38 dBV | 1.0 V rms | 750 Ω | Bottom |
| ICS-40619 | -38 dBV | 1.0 V rms | 750 Ω | Top |
| ICS-40720 | -32 dBV | 0.63 V rms | 700 Ω | Bottom |

EVALUATION BOARD CIRCUIT

Figure 1 shows the schematic of the evaluation boards, and Figures 2-4 show the flex board layouts. See the respective microphone data sheets for complete descriptions and specifications of the microphones.

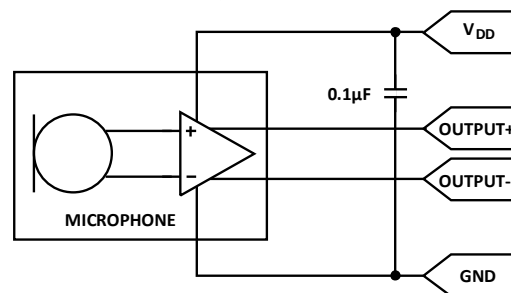


Figure 1. Evaluation Board Schematic

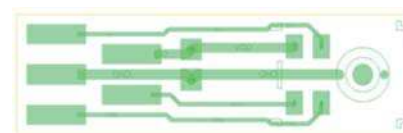


Figure 2. EV_ICS-40618-FX Board Layout (Top View)

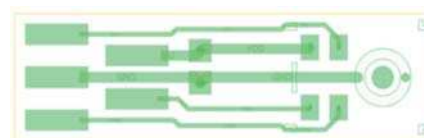


Figure 3. EV_ICS-40619-FX Board Layout (Top View)

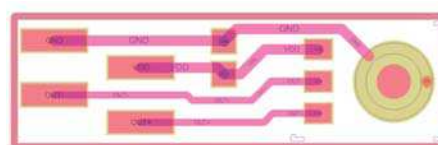


Figure 4. EV_ICS-40720-FX Board Layout (Top View)

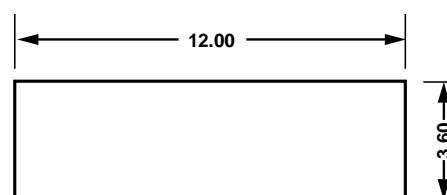


Figure 5. Dimensions in Millimeters (Wires Not Included)

EVALUATION BOARD PHOTOGRAPHS

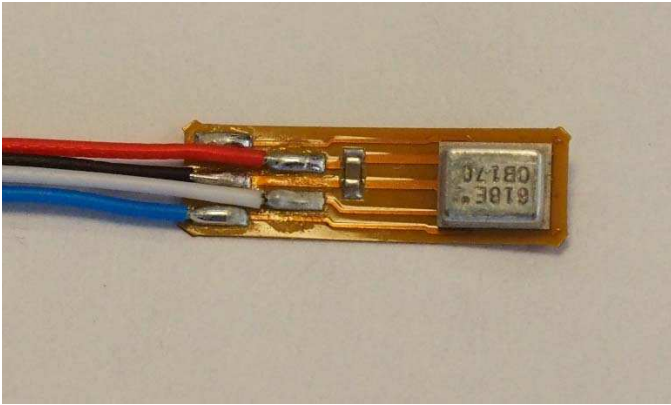


Figure 6. EV_ICs-40618-FX Top View

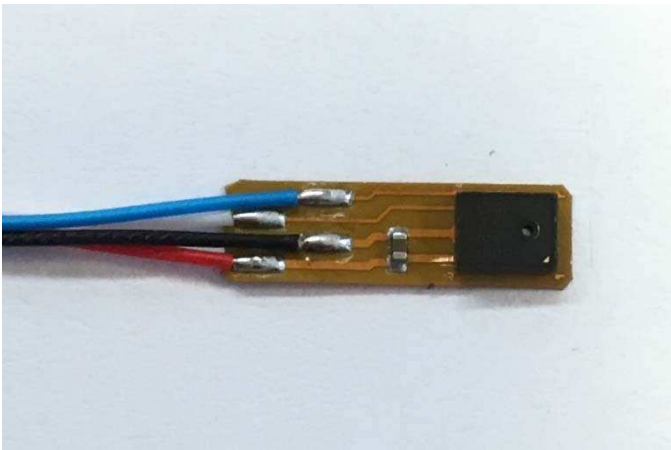


Figure 7. EV_ICs-40619-FX Top View

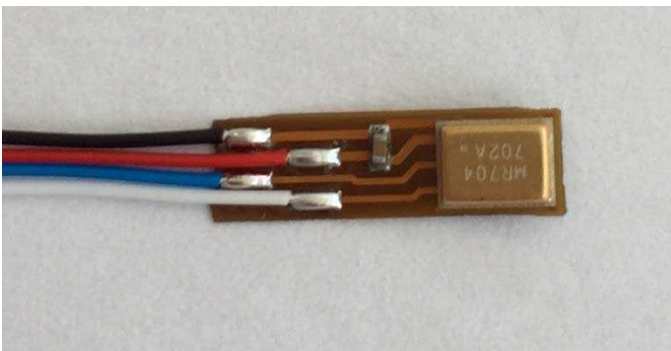


Figure 8. EV_ICs-40720-FX Top View

REVISION HISTORY

| REVISION DATE | REV NUMBER | DESCRIPTION |
|---------------|------------|---|
| 09/25/2014 | 1.0 | Initial release |
| 10/16/2015 | 1.1 | Updated eval board guide to show ICS-40618/9 boards |
| 6/15/2016 | 1.2 | Updated Figure 2; updated company logo |

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