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
- EV_ICS-40730-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 top or 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 four 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. MICROPHONE FUNCTIONAL DIFFERENCES

Microphone	Sensitivity	Maximum Output Voltage	Output Impedance	Mic Port Location
ICS-40618	−38 dBV	1.0 V rms	355 Ω	Bottom
ICS-40619	−38 dBV	1.0 V rms	355 Ω	Top
ICS-40720	−32 dBV	0.79 V rms	700 Ω	Bottom
ICS-40730	−32 dBV	0.79 V rms	430 Ω	Bottom

EVALUATION BOARD CIRCUIT

Figure 1 shows the schematic of the evaluation boards, and Figures 2-5 show the flex board layouts. See the respective microphone data sheets for complete descriptions and specifications of the microphones.

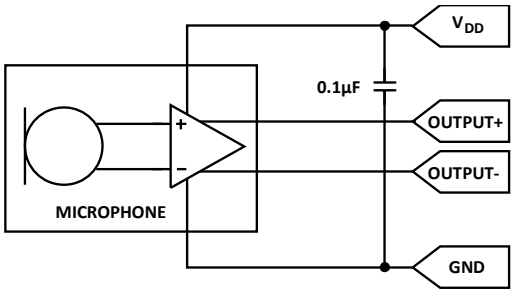

Figure 1. Evaluation Board Schematic

Figure 2. EV_ICS-40618-FX Board Layout (Top View)
12 mm x 3.6 mm

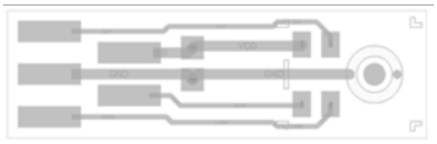

Figure 3. EV_ICS-40619-FX Board Layout (Top View)
12 mm x 3.6 mm

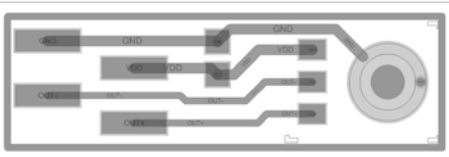

Figure 4. EV_ICS-40720-FX Board Layout (Top View)
12 mm x 3.6 mm

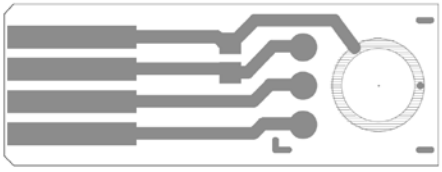

Figure 5. EV_ICS-40730-FX Board Layout (Top View)
13.5 mm x 5.0 mm

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EVALUATION BOARD PHOTOGRAPHS

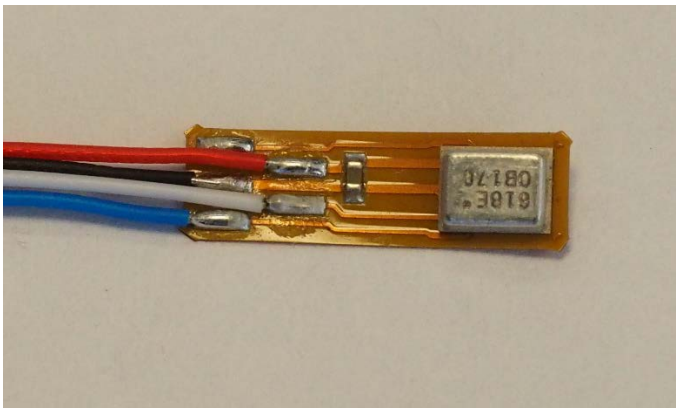

Figure 6. EV_ICS-40618-FX Top View

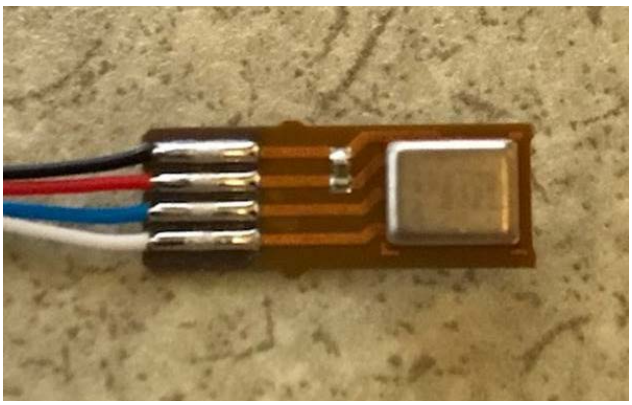

Figure 9. EV_ICS-40730-FX Top View

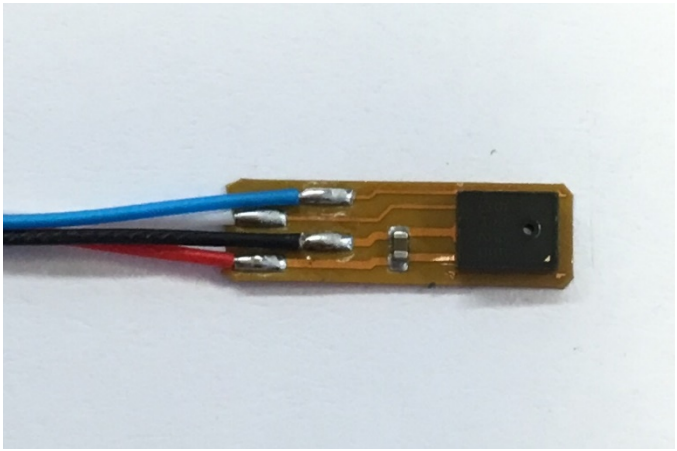

Figure 7. EV_ICS-40619-FX Top View

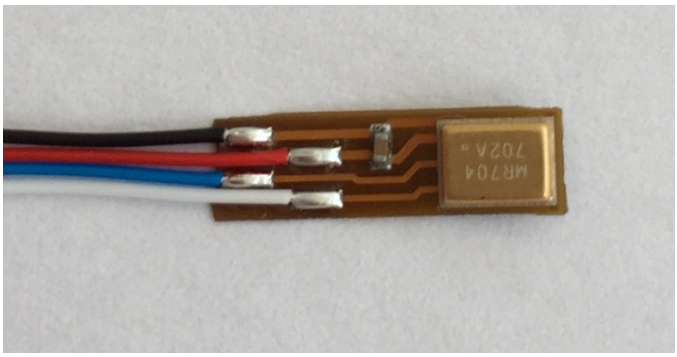

Figure 8. EV_ICS-40720-FX Top View

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
09/06/2017	1.3	Updated eval board guide to show ICS-40730

COMPLIANCE DECLARATION DISCLAIMER

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