

T5838 Flex EVB User Guide

GENERAL DESCRIPTION

The T5838 is a digital PDM MEMS microphone. This user guide provides information on how to use the flexible evaluation board for this part, EV_T5838-FX2.

This is a simple evaluation board that allows quick evaluation of the performance of PDM 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 an edge connector. Other components on the board are a 0.1 μF supply bypass capacitor and a 50 Ω series resistor on the data line. The flex edge is an 8 position 0.5mm pitch connector which mates to a standard connector such as Kyocera (MPN 046288008000846+, Digkey PN 478-5454-1-ND) or Molex (MPN 0527450897, Digkey PN WM3772TR-ND).

Table 1 describes the functions of the wire connections. **Table 2** describes the performance specifications of the microphone flex board.

TABLE 1. PIN FUNCTION DESCRIPTIONS

Pin #	Pin label	Microphone Pin	Description
1	T	THSEL	Threshold select input for AAD
2	G	GND	Ground
3	V	VDD	Power Supply. 1.65 - 1.98 VDC
4	D	DATA	Data output
5	C	CLK	Clock input
6	S	L/R SELECT	L/R select; Right = 0, Left = 1
7	G	GND	Ground
8	W	WAKE	Wake output for AAD

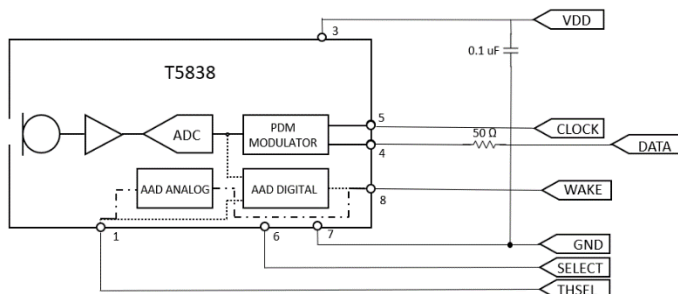


Figure 1. EV_T5838-FX2 Schematic

TABLE 2. MICROPHONE PERFORMANCE SPECIFICATIONS

Sensitivity	Typical Supply Current	SNR	AOP	Clock Frequency
<u>High Quality Mode:</u> -41 dBFS +/- 1	310 μA	68 dB	133 dB SPL	2.0 - 3.7 MHz
<u>Low Power Mode:</u> -26 dBFS +/- 1	120 μA	65 dB	119 dB SPL	400 - 800 kHz
<u>Ultrasonic Mode:</u> -41 dBFS +/- 1	500 μA	68 dB	133 dB SPL	4.2 - 4.8 MHz

EVALUATION BOARD CIRCUIT

Figure 1 shows the schematic of the evaluation board **Figure 2** shows the flex board and layout. See the respective microphone data sheets for complete descriptions and specifications of the microphones **Figure 3** shows the dimensions of the flex board and identifies the location of the sound port. **Figure 4** shows the lid marking to verify the microphone PN

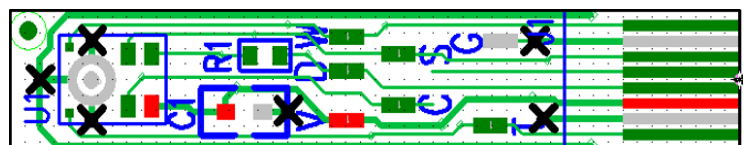


Figure 2. EV_T5838-FX2 Top View

Figure 3. EV_T5838-FX2 Dimensions in Millimeters

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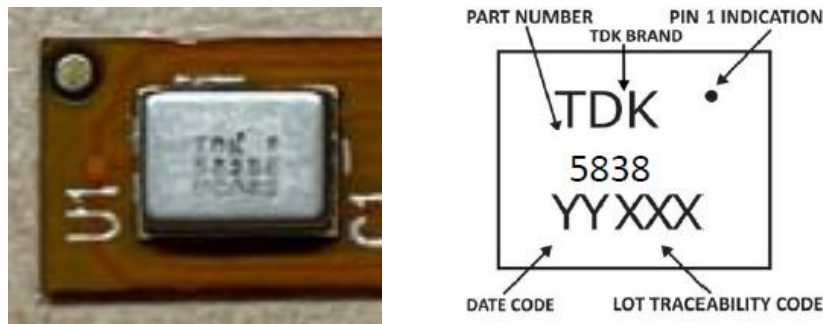


Figure 4. T5838 lid marking

REVISION HISTORY

REVISION DATE	REVISION	DESCRIPTION
4/19/2021	1.0	Initial release
4/5/2022	1.1	Updated Table 2 and Figure 2
8/2/2022	1.2	Updated information on flex edge connector

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