T5837 Flex EVB User Guide

GENERAL DESCRIPTION

The T5837 is a digital PDM MEMS microphone. This user guide provides information on how to use the flexible evaluation board for this part, EV_T5837-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+, Digikey PN 478-5454-1-ND) or Molex (MPN 0527450897, Digikey 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	NC	No Connect
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	NC	No Connect

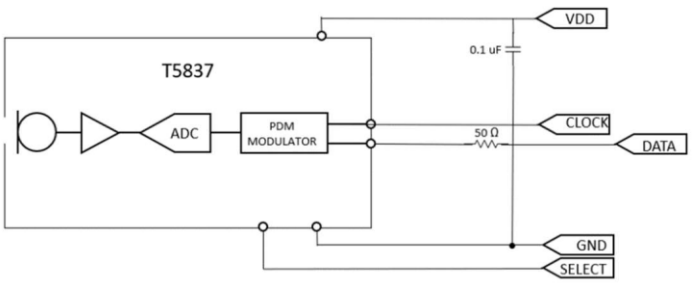

Figure 1. EV_T5837-FX2 Schematic

TABLE 2. MICROPHONE PERFORMANCE SPECIFICATIONS

Sensitivity	Typical Supply Current	SNR	AOP	Clock Frequency
High Quality Mode: -37 dBFS +/- 1	310 µA	68 dB	133 dBSPL	2.0 - 3.7 MHz
Low Power Mode: -21 dBFS +/- 1	120 µA	65.5 dB	117 dBSPL	400 – 800 kHz
Ultrasonic Mode: -37 dBFS +/- 1	500 µA	68 dB	133 dBSPL	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

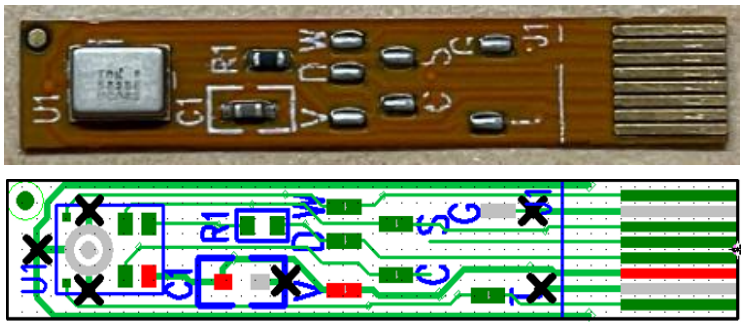

Figure 2. EV_T5837-FX2 Top View

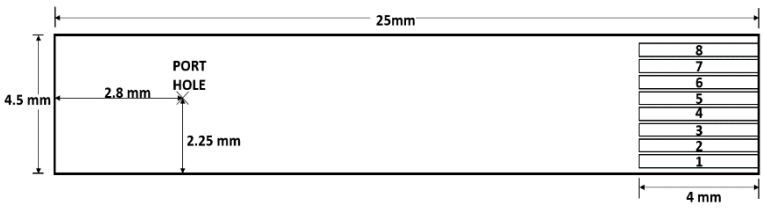

Figure 3. EV_T5837-FX2 Dimensions in Millimeters

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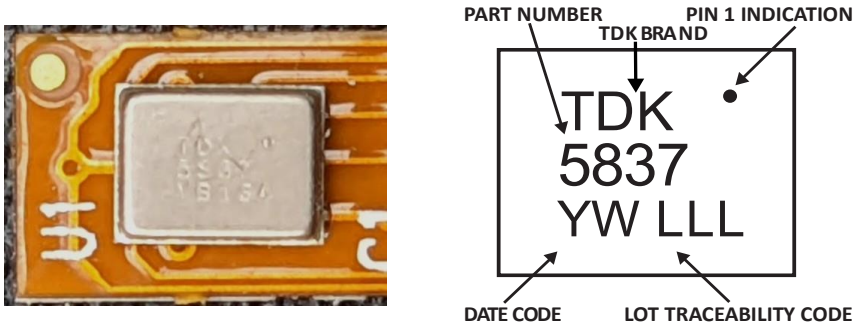

Figure 4. T5837 lid marking

REVISION HISTORY

REVISION DATE	REVISION	DESCRIPTION
4/13/2022	1.0	Initial release
8/2/2022	1.1	Fixed HQM and USM Sensitivity specs in table 2. Updated name to -FX2 convention. Updated description of edge connector

COMPLIANCE DECLARATION DISCLAIMER

TDK 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. TDK subcontracts manufacturing, and the information contained herein is based on data received from vendors and suppliers, which has not been validated by TDK.