Analog microphone array expansion for the SensorTile Wireless Industrial Node (STWIN) kit

Features

- Analog microphone array expansion for STWIN (STEVAL-STWINKT1)
- Connects to STWIN core system board through dedicated 12-pin connector
- 3 V to 5.5 V power supply input
- 4 mm square-shaped differential microphone array
- 4x MP23ABS1 high-performance, single-ended, analog, bottom-port MEMS microphones
- LDK130 300 mA low quiescent current very low noise LDO
- On-board audio-grade quad ADC
- Serial Audio Interface (SAI) digital output

Description

The STEVAL-STWINMAV1 microphone array expansion adds advanced audio sensing capabilities to the STEVAL-STWINKT1 SensorTile Wireless Industrial Node (STWIN) kit for high frequency vibration monitoring applications.

The board includes four low-power, high signal-to-noise ratio (SNR) MP23ABS1 capacitive sensing microphones, supported by a very low drop voltage, low quiescent current and low-noise voltage regulator ideal for batter-powered applications such as STWIN.

The expansion board is connected via a dedicated 12-pin connector to the core system board, which runs the STSW-STWINKT01 firmware with dedicated BSP drivers and application examples for you to test and develop vibration monitoring in the ultrasound frequency ranges.
Figure 1. STEVAL-STWINMAV1 schematic - Mics, VDD and connector

Analog Mics

Analog VDD
Figure 2. STEVAL-STWINMA V1 schematic - ADC

ADC

Place close to AVDD1, AVDD2, AVDD3 pins

Place close to IOVDD
Revision history

Table 1. Document revision history

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<thead>
<tr>
<th>Date</th>
<th>Version</th>
<th>Changes</th>
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<tr>
<td>08-Jul-2019</td>
<td>1</td>
<td>Initial release.</td>
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