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# STEVAL-C34KAT1

Data brief

## Vibrometer and temperature sensor expansion kit



## Features

- Kit content:
  - a STEVAL-C34AT01 multisensing expansion board (25x25mm) with a 34-pin board-to-FPC connector
  - a 34-pin flexible cable
- Ideal plug-in for the STEVAL-STWINBX1 evaluation board
- Ultra-wide bandwidth (up to 6 kHz), low-noise, 3-axis digital vibration sensor (IIS3DWB):
  - Ultra-wide and flat frequency response range: from DC to 6 kHz (±3 dB point)
  - Low-pass or high-pass filter with a selectable cut-off frequency
  - 1.1 mA with the three axes at full performance
  - Extended temperature range from -40 to +105°C
- Low-voltage, ultra-low-power, 0.5°C accuracy I²C/SMBus 3.0 temperature sensor (STTS22H)
  - Programmable thresholds through an interrupt pin
  - Ultra-low current: 1.75 µA in one-shot mode
  - Operating temperature -40 to +125°C
- Exposed pad on the bottom side to improve the thermal coupling for the temperature sensor
- 2.1 to 3.3 V power supply input

| Product summary | |
|---|---|
| Vibrometer and temperature sensor expansion kit | STEVAL-C34KAT1 |
| Software example for STEVAL-C34KAT1 and STEVAL-STWINBX1 | FP-SNS-DATALOG2 |
| Ultra-wide bandwidth, low-noise, 3-axis digital vibration sensor | IIS3DWBTR |
| Low-voltage, ultra-low-power, 0.5°C accuracy I²C/ SMBus 3.0 temperature sensor | STTS22HTR |
| Applications | Factory automation<br>Industrial sensors |

## Description

The STEVAL-C34KAT1 is a multisensing expansion kit that includes the STEVAL-C34AT01 expansion board and a flexible cable.

The small form factor and the accurate design allow a precise measurement of vibrations up to the sensor bandwidth (6 kHz) as well as of the temperature.

The IIS3DWB vibration sensor is soldered at the center of the small 25 x 25 mm board. The STTS22H temperature sensor is placed on the PCB side and is thermally coupled to the PCB bottom exposed pad through vias.

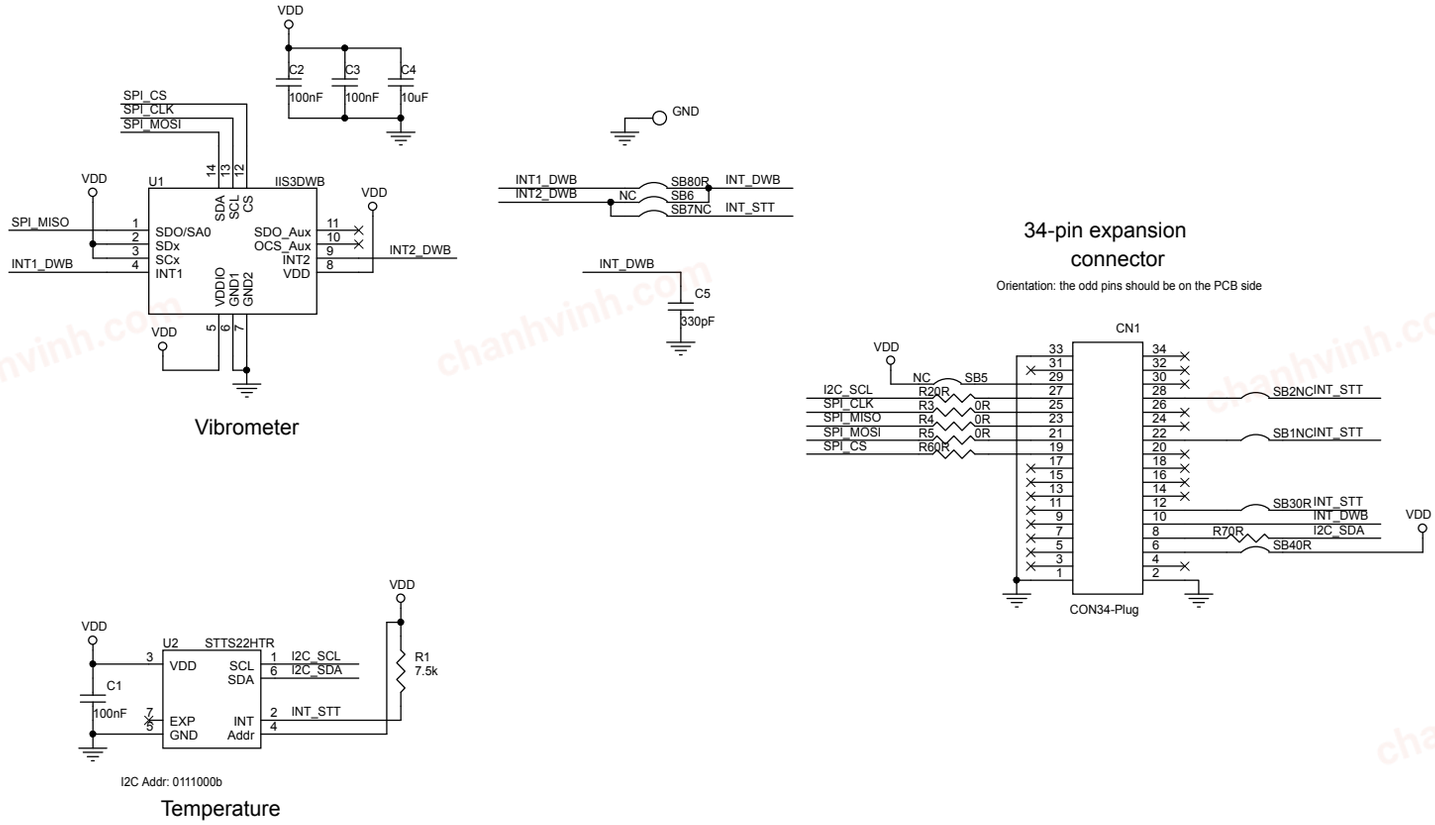
The expansion board can be mounted on the equipment for the vibration analysis using the four holes or the double-sided adhesive tape. This board is compatible with the STWIN.box kit (STEVAL-STWINBX1).

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# 1 Schematic diagrams

**Figure 1. STEVAL-C34KAT1 circuit schematic: STEVAL-C34AT01**



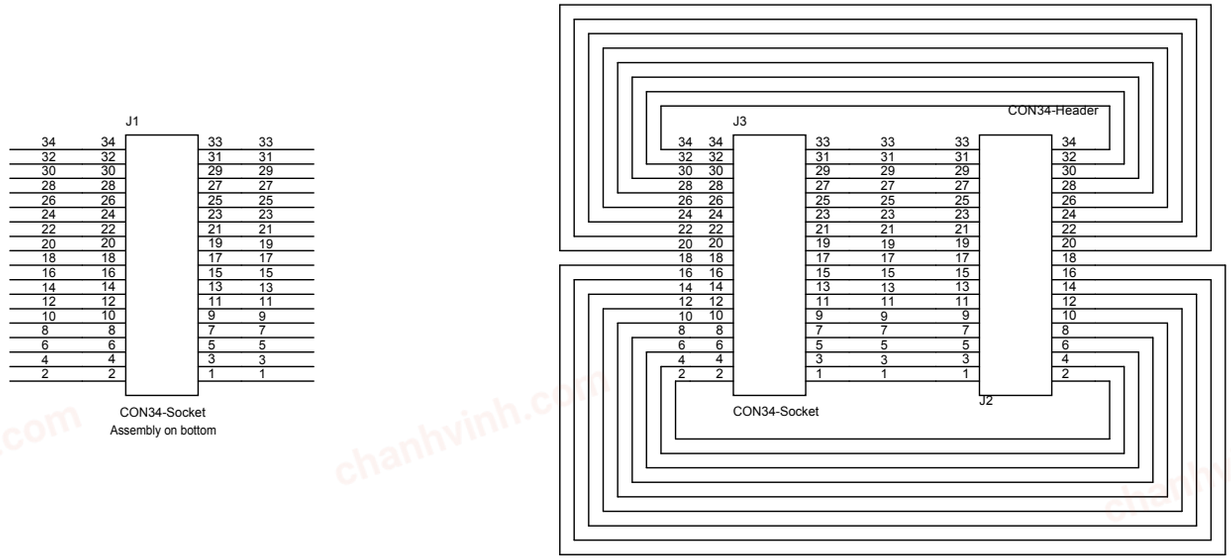

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**Figure 2. STEVAL-C34KAT1 circuit schematic: STEVAL-FLTCB01**



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## 2 Kit versions

**Table 1. STEVAL-C34KAT1 versions**

| PCB version | Schematic diagrams | Bill of materials |
|---|---|---|
| STEVAL$C34KAT1A (1) | STEVAL$C34KAT1A schematic diagrams | STEVAL$C34KAT1A bill of materials |

1. *This code identifies the STEVAL-C34KAT1 evaluation kit first version. The kit consists of the STEVAL$C34AT01A expansion board and the STEVAL$FLTCB01A flexible cable. The STEVAL$C34AT01A code is printed on the expansion board PCB. The STEVAL$FLTCB01A code is printed on the flexible cable.*

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## Revision history

Table 2. **Document revision history**

| Date | Revision | Changes |
|---|---|---|
| 15-Dec-2022 | 1 | Initial release. |

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