

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 $+105^{\circ}\text{C}$
- 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: $1.75\ \mu\text{A}$ in one-shot mode
 - Operating temperature -40 to $+125^{\circ}\text{C}$
- 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 I ² C/SMBus 3.0 temperature sensor	STTS22HTR
Applications	Factory automation 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](#)).

1 Schematic diagrams

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

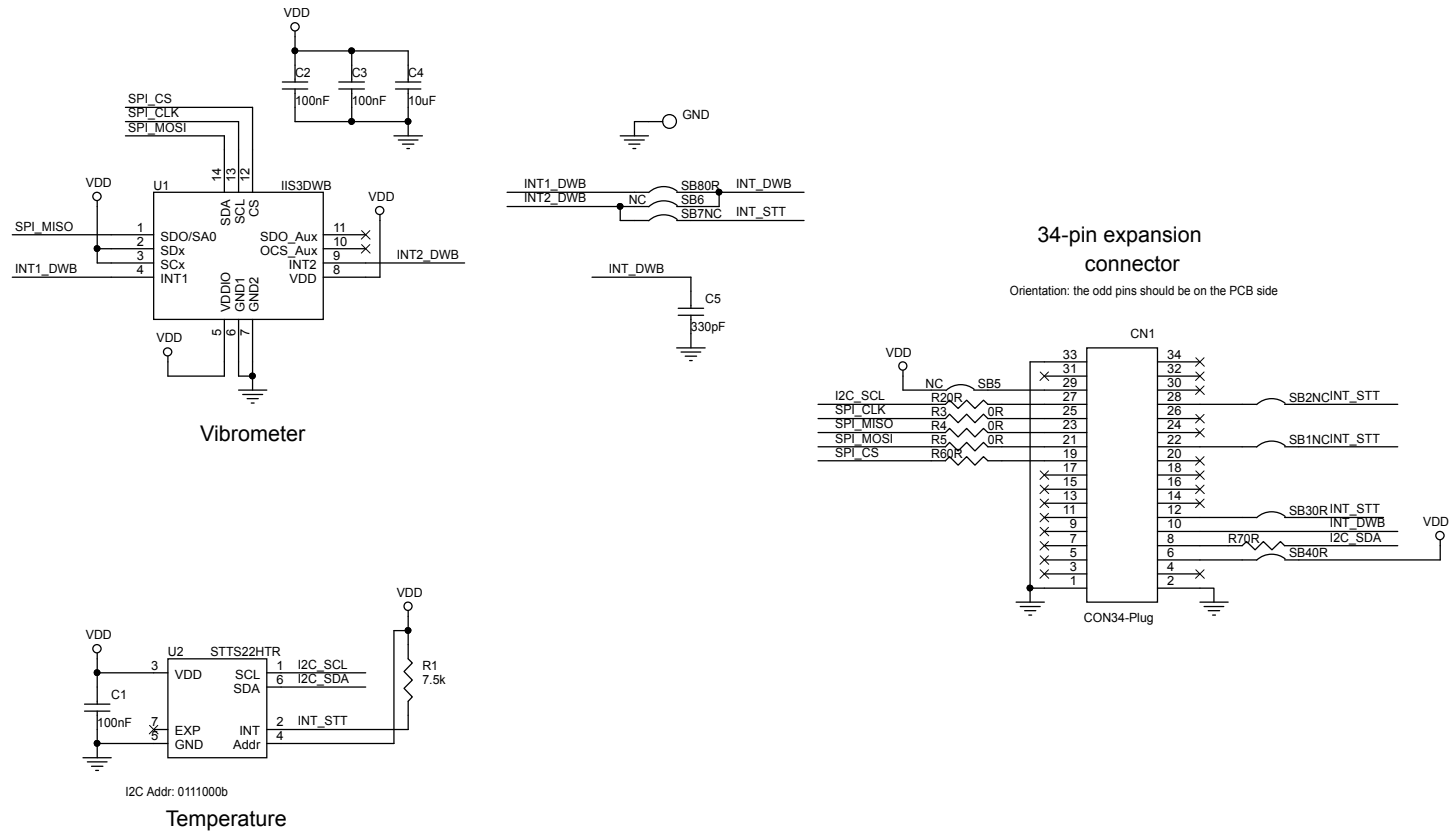
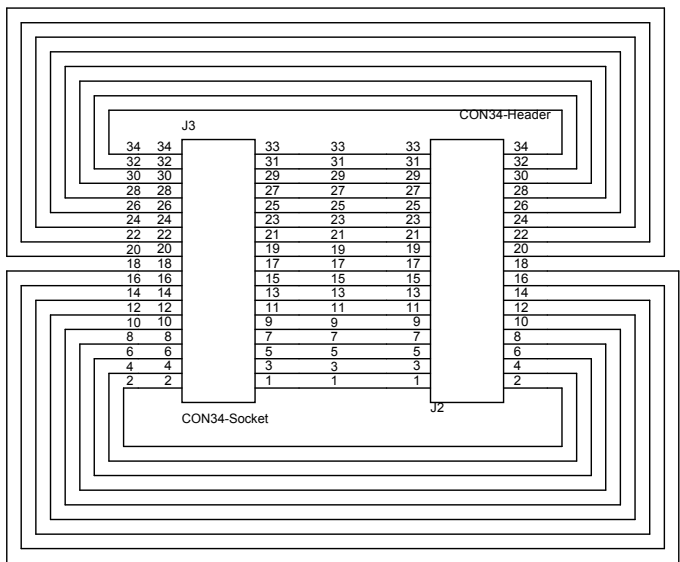
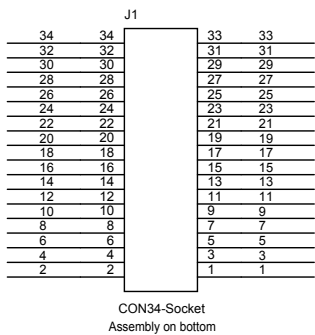


Figure 2. STEVAL-C34KAT1 circuit schematic: STEVAL-FLTCB01



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.

Revision history

Table 2. Document revision history

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

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