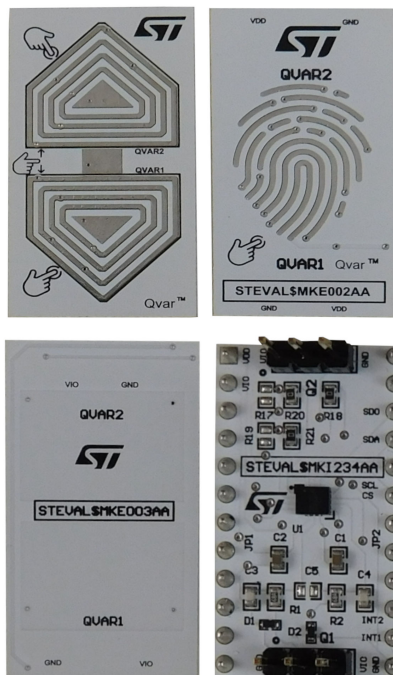


LSM6DSV16BX adapter kit for accelerometer and gyroscope IMU (inertial measurement unit) with Qvar functionality for UI and bone conduction



Features

- User-friendly [LSM6DSV16BX](#) board
- Complete [LSM6DSV16BX](#) pinout for a standard DIL 24 socket
- Fully compatible with the [STEVAL-MKI109V3](#) motherboard
- RoHS compliant

Description

The [STEVAL-MKI234KA](#) evaluation kit is based on the [LSM6DSV16BX](#) IMU (inertial measurement unit) with a Qvar electrostatic sensor and three different electrodes (swipe, finger, and generic) to make it compatible with the [STEVAL-MKI109V3](#). The kit provides the complete [LSM6DSV16BX](#) pinout and comes ready-to-use with the required decoupling capacitors on the VDD power supply line. The [STEVAL-MKE00xAA](#) can be plugged into the [STEVAL-MKI234A](#) board.

This adapter is supported by the [STEVAL-MKI109V3](#) motherboard, which includes a high-performance 32-bit microcontroller functioning as a bridge between the sensor and a PC.

It is also possible to plug the [STEVAL-MKI234A](#) board into an [X-NUCLEO-IKS01A3](#) expansion board.

[MEMS-Studio](#) is a complete software solution for the evaluation and programming of all MEMS sensors and it is available for [Linux](#), [macOS](#), and [Windows](#) operating systems.

You can also use the downloadable graphical user interface ([Unico-GUI](#)) or dedicated software routines for customized applications.

Product summary	
Accelerometer and gyroscope IMU (inertial measurement unit) for UI and bone conduction kit with Qvar functionality based on LSM6DSV16BX	STEVAL-MKI234KA
6-axis IMU with sensor fusion, AI, Qvar, hearable features for TWS	LSM6DSV16BX
MEMS adapter motherboard based on the STM32F401VE	STEVAL-MKI109V3
Motion MEMS and microphone MEMS expansion board for STM32 Nucleo	X-NUCLEO-IKS01A3
Applications	Smart glasses (AR)

1 Schematic diagrams

Figure 1. STEVAL-MKE001A circuit schematic

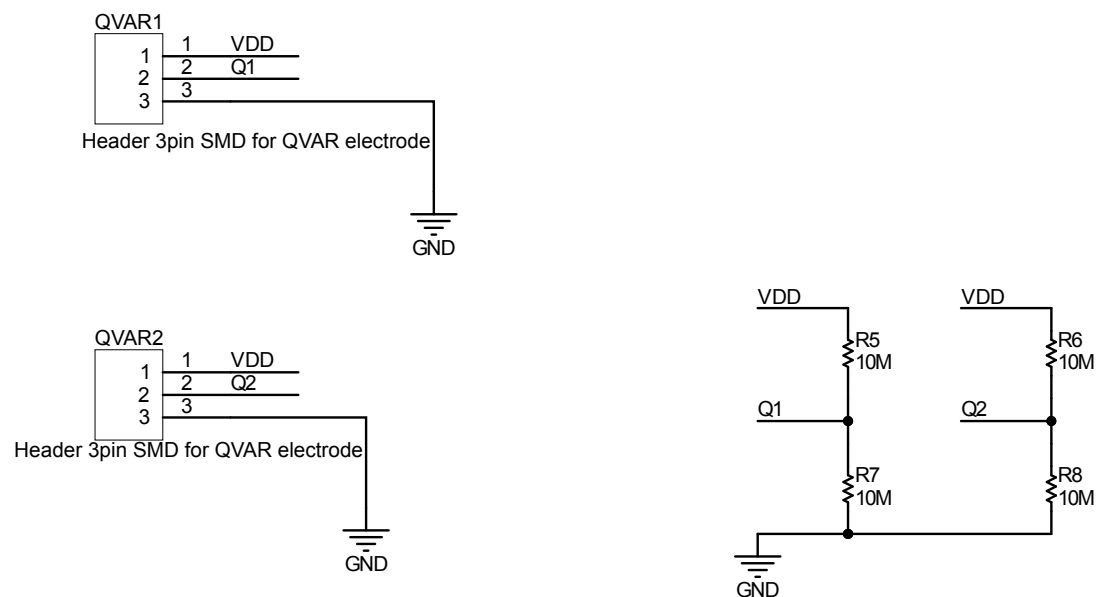
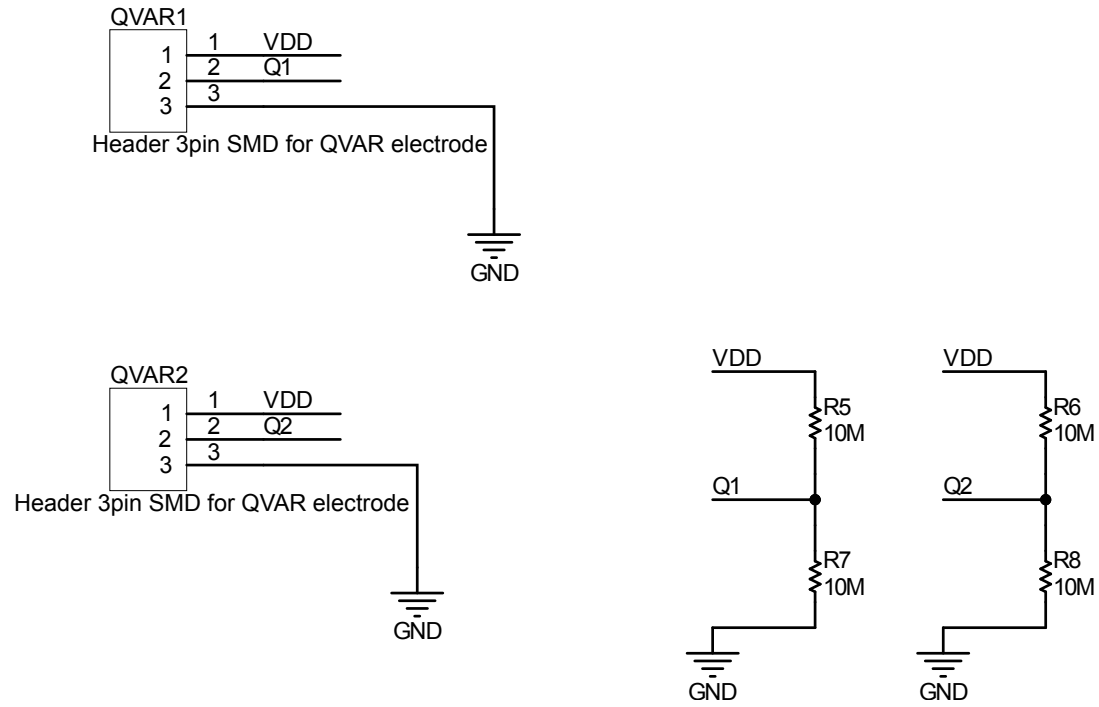
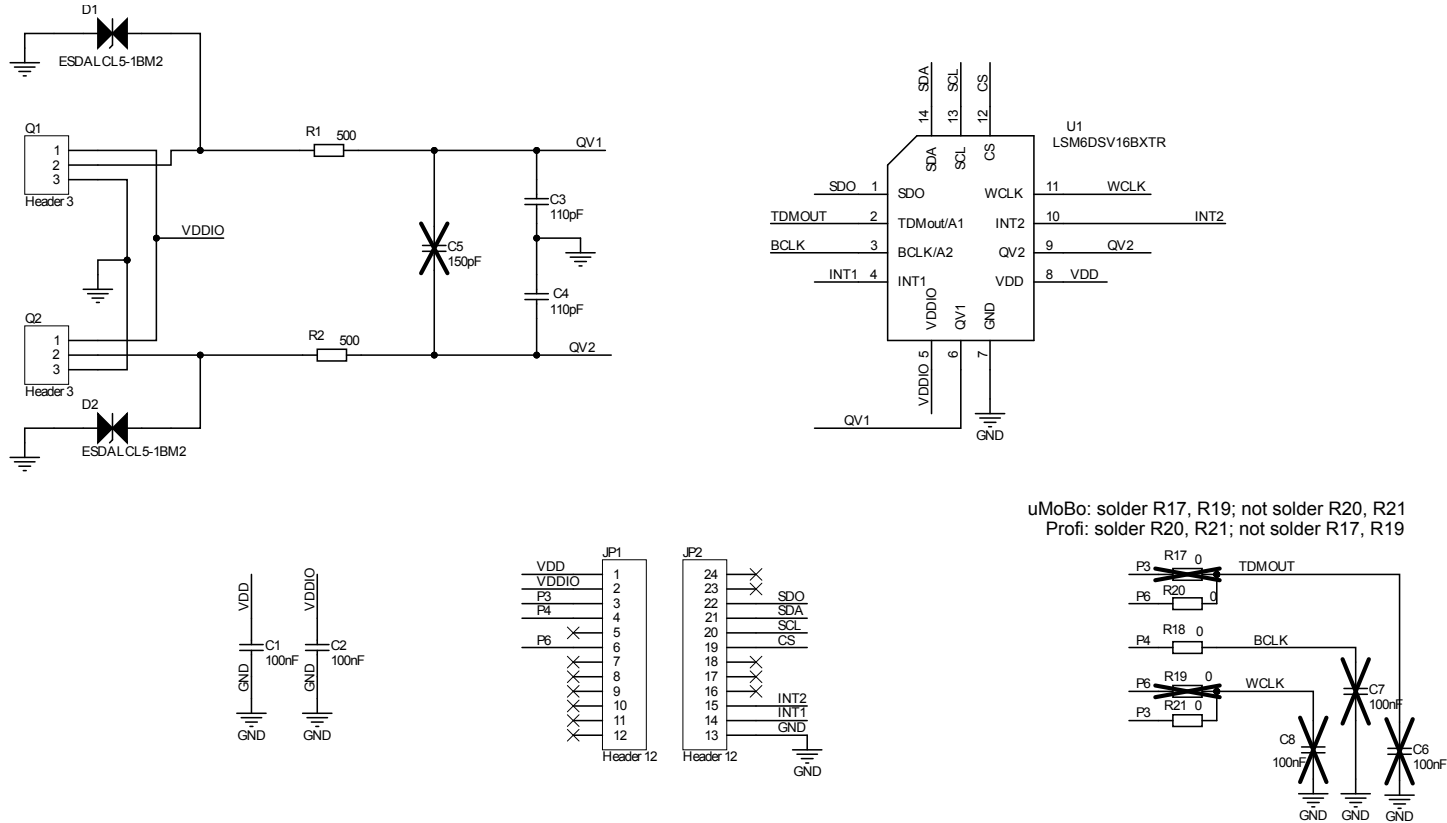


Figure 2. STEVAL-MKE002A circuit schematic



The top diagram shows the internal circuit of QVAR2. It has three pins: 1, 2, and 3. Pin 1 is connected to VIO. Pin 2 is connected to Q2. Pin 3 is connected to ground. Inside the component, there are two resistors, R1 and R2, both labeled 10M. R1 is connected between VIO and Q2. R2 is connected between Q2 and ground. The bottom diagram shows the internal circuit of QVAR1. It has three pins: 1, 2, and 3. Pin 1 is connected to VIO. Pin 2 is connected to Q1. Pin 3 is connected to ground. Inside the component, there are two resistors, R3 and R4, both labeled 10M. R3 is connected between VIO and Q1. R4 is connected between Q1 and ground.

Figure 4. STEVAL-MKI234A circuit schematic



2 Kit versions

Table 1. STEVAL-MKI234KA versions

PCB version	Schematic diagrams	Bill of materials
STEVAL\$MKI234KAA ⁽¹⁾	STEVAL\$MKI234KAA schematic diagrams	STEVAL\$MKI234KAA bill of materials

1. This code identifies the STEVAL-MKI234KA evaluation kit first version. The kit consists of a STEVAL-MKI234AA whose version is identified by the code STEVAL\$MKI234AAA, a STEVAL-MKE001A whose version is identified by the code STEVAL\$MKE001AA, a STEVAL-MKE002A whose version is identified by the code STEVAL\$MKE002AA and a STEVAL-MKE003A whose version is identified by the code STEVAL\$MKE003AA.

Revision history

Table 2. Document revision history

Date	Revision	Changes
07-Nov-2022	1	Initial release.
13-Jun-2024	2	Updated Description to include MEMS-Studio software solution Minor textual updates

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