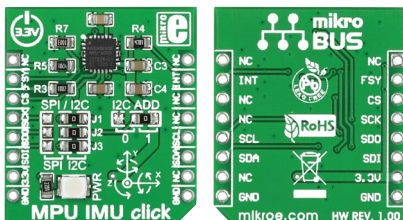# MPU IMU click™

## 1. Introduction

MPU IMU click is an add-on board in **mikroBUS™** form factor. It carries the **MPU-6000**, the integrated 6-axis motion tracking device from InvenSense. The **MPU-6000** is the world's first to combine a 3-axis gyroscope, a 3-axis accelerometer, and a Digital Motion Processor (DMP) into a single small chip. Together they constitute an Inertial Measurement Unit. The MPU IMU click communicates with the target board microcontroller through mikroBUS™ SPI, I2C, RST and INT lines. The board is designed to use a 3.3V power supply only. A LED diode serves as a power indicator.
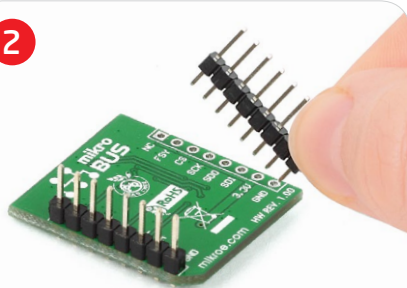
## 2. Soldering the headers

Before using your click™ board, make sure to solder 1x8 male headers to both left and right side of the board. Two 1x8 male headers are included with the board in the package.
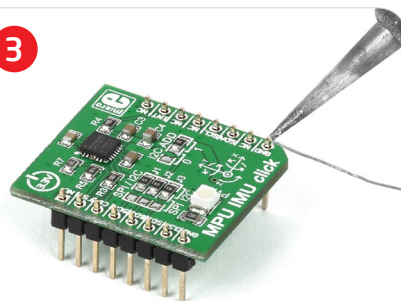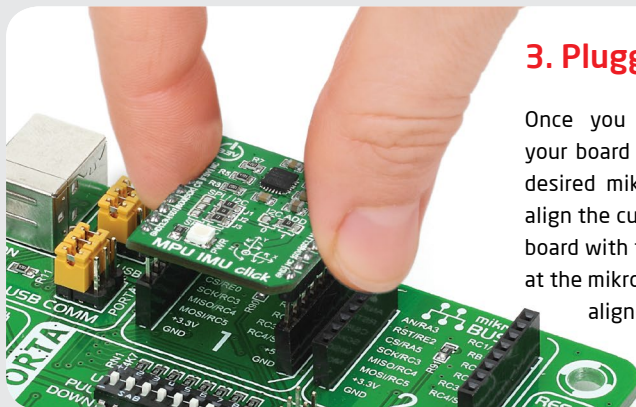
**1**

**2** Turn the board upside down so that the bottom side is facing you upwards. Place shorter pins of the header into the appropriate soldering pads.

**3** Turn the board upward again. Make sure to align the headers so that they are perpendicular to the board, then solder the pins carefully.

## 3. Plugging the board in

Once you have soldered the headers your board is ready to be placed into the desired mikroBUS™ socket. Make sure to align the cut in the lower-right part of the board with the markings on the silkscreen at the mikroBUS™ socket. If all the pins are aligned correctly, push the board all the way into the socket.
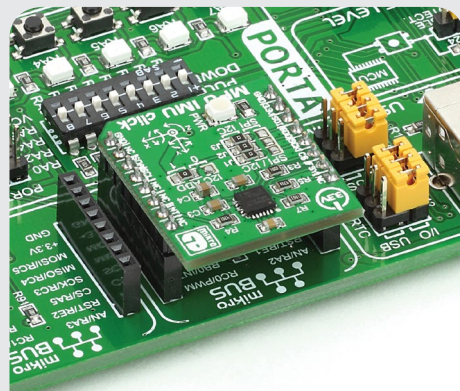
## 4. Essential features

The MPU IMU click offers a single solution for adding motion tracking to your design. The on-board **MPU-6000** combines a DMP with a 3-axis gyro with a sensitivity up to 131 LSBs/dps and a full-scale range of ±250, ±500, ±1000, and ±2000dps; and a 3-axis accelerometer with a programmable full scale range of ±2g, ±4g, ±8g and ±16g. These features make this board ideal for applications like motion-based remote controls, wearable fitness and sports gadgets, toys etc.
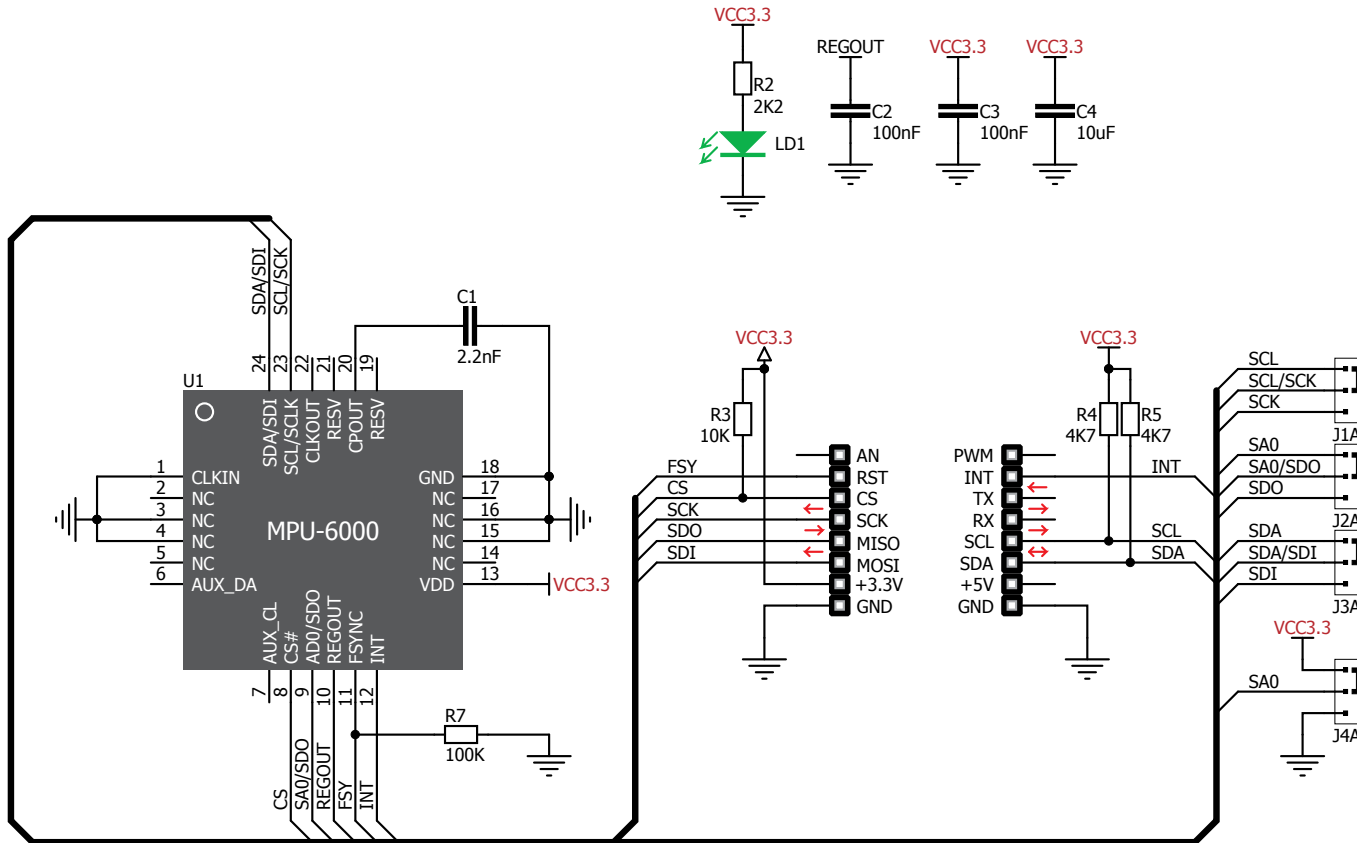
# click™
## BOARD
www.mikroe.com

# 5. MPU IMU click™ Board Schematic



## 6. Motion Processing

The internal Digital Motion Processing engine supports 3D MotionProcessing and gesture recognition algorithms. Panning, zooming, scrolling, zero-motion detection, shake detection and tap detection are among the many features supported by programmable interrupt. There's also a low-power pedometer functionality that allows the target board's MCU to sleep while the DMP maintains the step count.

## 7. Code Examples

Once you have done all the necessary preparations, it's time to get your click™ board up and running. We have provided examples for mikroC™, mikroBasic™ and mikroPascal™ compilers on our **Libstock** website. Just download them and you are ready to start.

## 8. Support

MikroElektronika offers **Free Tech Support (www.mikroe.com/support/)** until the end of the product's lifetime, so if something goes wrong, we're ready and willing to help!

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