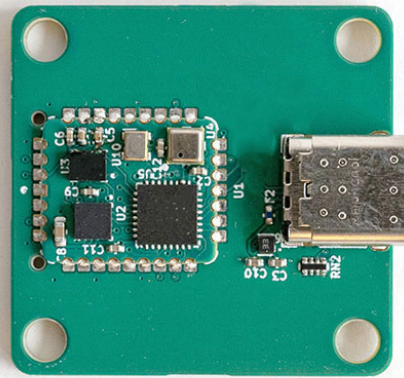




# MOTION NODE



## USB IMU Dev-kit

**Motion Node** USB dev kit is a hardware example board integrating our [MotionNode IMU PCB module](#) with USB-C connectivity. Includes state of the art on-board sensor fusion, and fast output samplerate of up to 1000Hz.

Visit [www.motionnode.com](http://www.motionnode.com) for videos and more.

- ✓ Designed and manufactured in the USA
- ✓ Fast-track your embedded USB IMU design
- ✓ Robust, rich data stream
- ✓ Free, open source SDK

## Fast-track your USB IMU design

### MotionNode App

Live-stream and record using our free app.

### Low Latency

1ms latency at 1000Hz

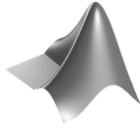
### Easy Data Access

Read data in real-time or post-recording with easy to use tools.

# Free open source SDK

Live-stream and record using our free, open source SDK. Access all channels in the rich MotionNode data stream. Visit our github repository for the SDK and examples in popular programming languages.

[www.github.com/motion-workshop](https://www.github.com/motion-workshop)



## Sensor data

The USB Read live measurement data from the [MotionNode PCB module](#) using SPI or UART interfaces.

- Rotation
- Angular velocity
- Calibrated accelerometer, gyroscope, and magnetometer signals

Please see the included circuit diagram, showing how you can embed the Motionnode IMU PCB module into your own board using USB connectivity.

The board's MotionNode IMU PCB module communicates over USB 2.0 via a USB-C connector. Connect this to any host computer (PC, Mac, Arm SBC, etc) running our MotionNode software to stream and record IMU data.

The resulting device is compatible with the [MotionNode app](#) and the [SDK](#), with the same functionality as our [MotionNode USB](#) product. Record takes and live-stream IMU data.

Follow our video tutorials showing how to use the usb dev-kit to interface with the on-board MotionNode pcb module.

# Technical specs

## Sensors

3-axis accelerometer, gyroscope, and magnetometer

## Sample rate

1000Hz update rate

Selectable output data rate

100Hz to 1000Hz

## Size

31x 32 x 3mm

## Host PC Connectivity

USB-C connector.

1 meter USB-A to USB-C cable

included.

## Orientation

Drift free, 3D rotation

0.5° static accuracy

2° dynamic accuracy

Full 360° range for each axis

## Latency

1ms at 1000Hz

# Sensor specs

	Range	Resolution	Noise
Accelerometer	±8 g	0.18 mg	65 (µg/rt-Hz)
Gyroscope	±2000 °/s	0.06 °/s	2.8 mdps/rt-Hz
Magnetometer	±8 gauss	0.25 mG	0.4 mG RMS

# Requirements

## Operating System

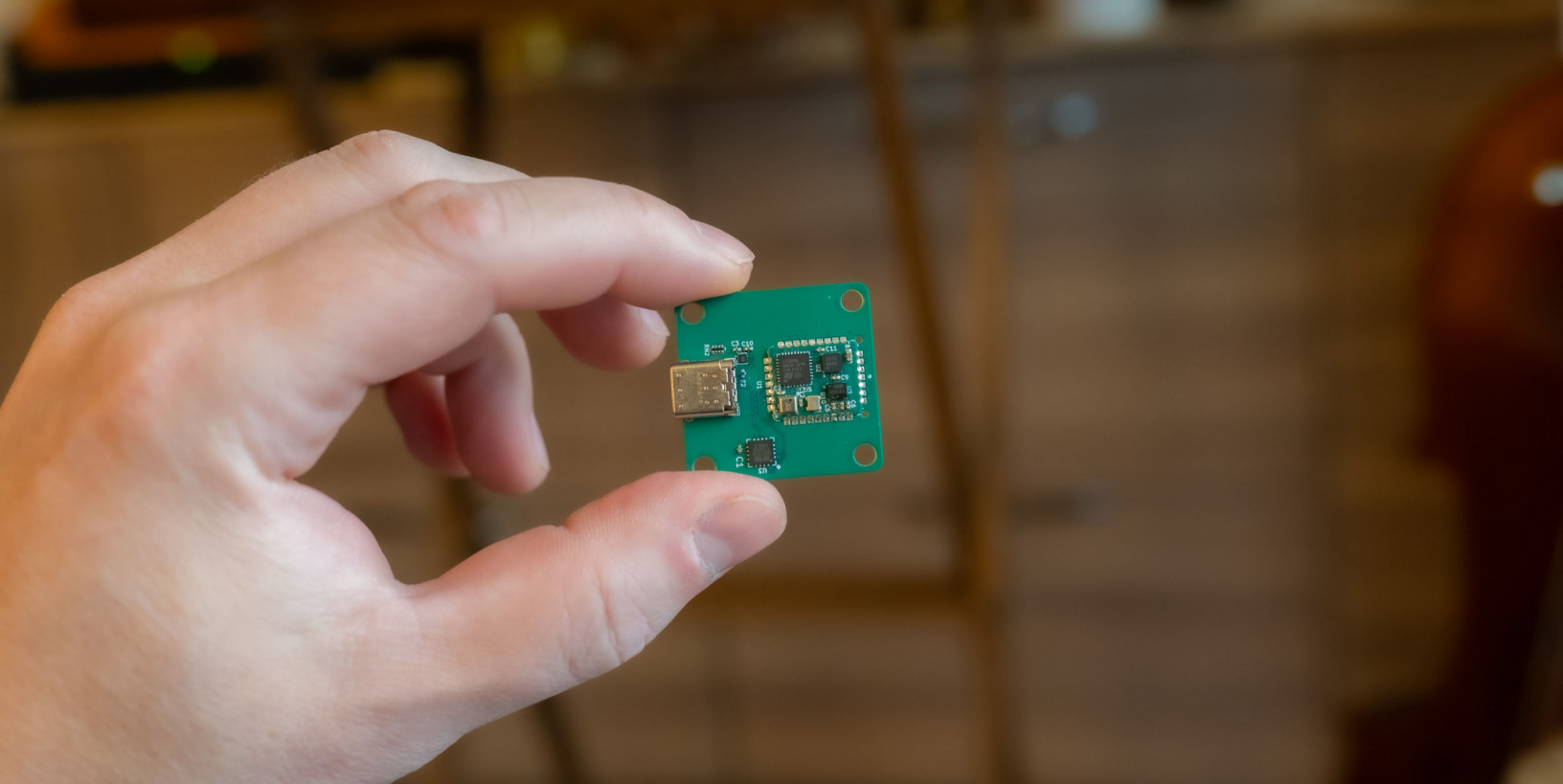
Works on Windows, macOS, Linux

## Connectivity

Requires a USB Standard-A port

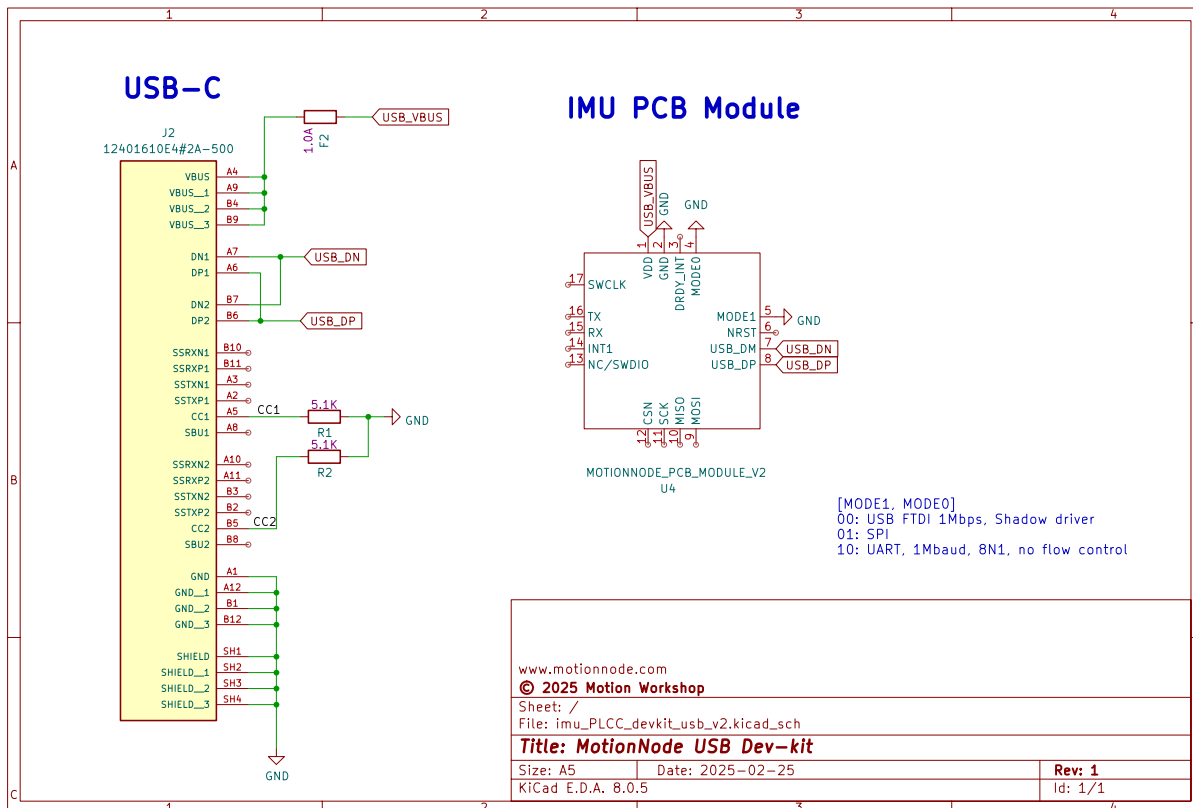
## Internet access

Recommended for setup



# Technical drawings

## MotionNode USB dev-kit schematic



# Ordering Information

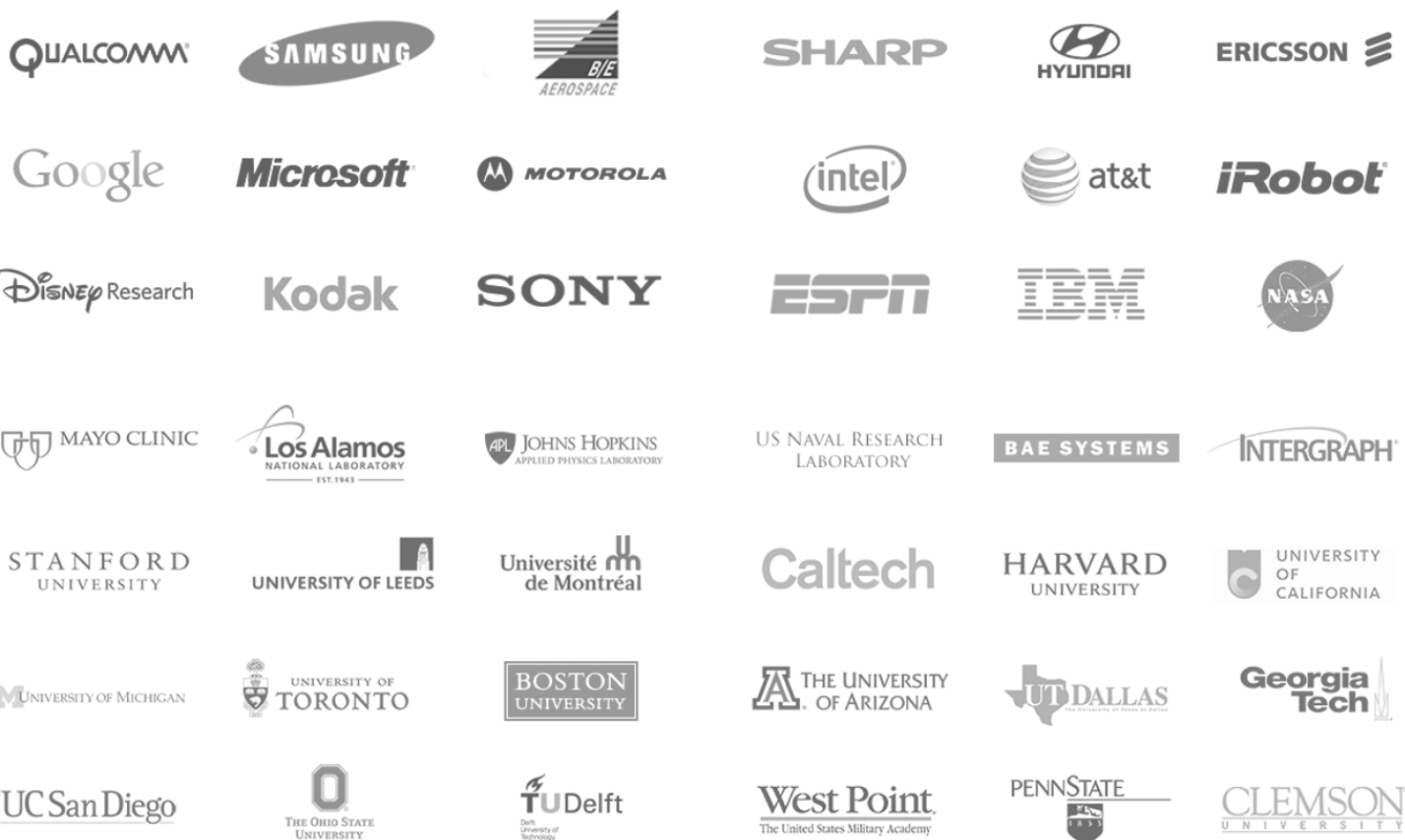
**DEVKIT-USB**

MotionNode USB dev-kit

Please contact us at [info@motionnode.com](mailto:info@motionnode.com) to place an order.

## Trust our proven solution

Field tested by the best and brightest in companies, research labs, and academic institutions.



# Spec Sheet Version

Current Version: 1

<b>Version</b>	<b>Date</b>
<b>1</b>	February 25, 2025