

DEVELOPMENT OF INERTIA MEASUREMENT SYSTEM

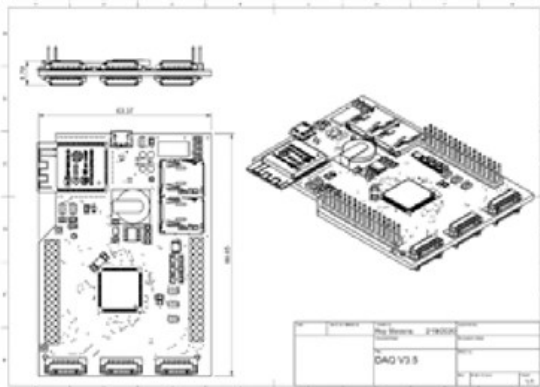


- High-g accelerometer chip
- Low-g IMU
- 32bit high-performance
- Flexible PCB sensors
- User interface
- Data acquisition systems

Project Overview

One of Henway's expertise consists of the development of inertia measurement systems. This is the case of the numerous versions of acceleration data acquisition systems developed for a customer. This project consists of a mainboard PCB that is connected to a series of user interface (with different connection configurations between the different versions).

In the latest design, the sensors are tiny PCBs containing a high-g accelerometer chip, a low-g IMU, and a tiny 32bit high-performance microcontroller. This combination gives to the customer the possibility to acquire and report high-g accelerations (particularly useful for impact studies), and low-g accelerations mixed together with angular rate measurements, that can be used to get each sensor orientation and real-time motion.



Flexible PCB sensors were also designed and manufactured to increase the connection quality and easiness. The mainboard, which is particularly designed according to the specific user dimensional

requirements, is in charge of collecting all the measurements and both: storing them into a local SD card and reporting them to a PC desktop application.

A battery is also included, to have the possibility to use the device in a standalone mode, when special field tests are required outside the laboratory.

In addition, a special desktop application was also developed by Henway, making the user interface a nice experience. With this desktop client application, the user can command the system behavior, set measurement configurations, retrieve test results logged into the SD card, calibrate each of the sensors, and generate custom CSV files containing the measurements of a particular test.



Desktop Client Application

