RT: Real-time Position Tracking System
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Abstract

◆ Heel-attached module to track operators in a Clean Room.
◆ Operators' locations are to be displayed on LabVIEW® screen.

Introduction

- A module containing MEMS inertia sensors, RFID reader, RF module, CPU, Battery, & contactless charging unit tracks operators.
- Inertia sensors send data for estimating position, and RFID calibrates its error.
- 9 operators can be tracked simultaneously.

Fig. 2. Monitor Screen

Methods

- 3 axis accelerometer and 3 axis gyroscope are embedded along with a RFID reader.
- Sensors are monitored every 10ms, data are transmitted every 100ms to the server.
- Around 20 parameters are to be used in calculations for one module.

Fig. 3. Trace Display

Results

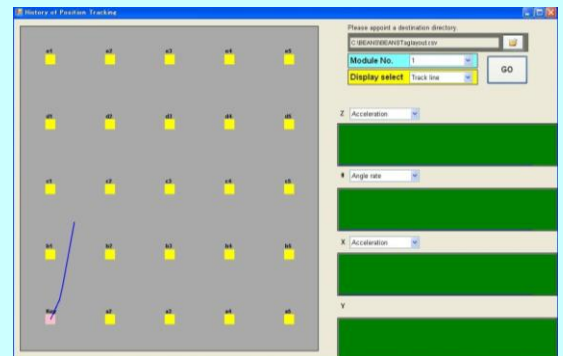**Fig. 1. PCB**

Summary

① Sensor data were successfully captured by the server.
② Position tracking algorithm is tested right now.
③ Automatic tuning can be added in 2011.