Development of Wireless Smart Mutisensor Devices for a Green World

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Abstract

◆ **Module-1,** Smart Sensor module consists of, Temperature, Humidity and pressure sensors has been developed.

◆ **Module-2,** Smart Sensor module consists of 3D-Accelerrometer, 3D-Gyrouscope and RFID reader has been developed.

Keywords: Wireless, Multisensor, MEMS

Introduction

Smart multisensor devices and sensor networks have an important impact in meeting environmental challenges. Therefore, these smart multisensor devices have been developed in order to monitor and control clean room environment. It can improve user's comfort and to reduce overall energy consumption for making a green world.

Methods

Module-1:SH The temperature sensor, Humidity sensor and pressure sensor were integrated in a 30mmx30x10mm package with MCU, inbuilt RF communication and PD2032 battery. The Fig.1 shows the developed smart multisensor module and screenshot of interface software. The, unique ultra low power RF wireless communication technique allows periodic monitoring with long battery life.

Module-2: RT MEMS 3D Accelerometer, 3D Gyroscope, RFID reader were integrated in a compact package having dimensions 30mmx40mmx10mm with inbuilt MCU, RF communication and inductive self powering system. Fig.2 shows the developed smart multisensor module and screenshot of interface software. All sensors are being monitored every 10ms interval and it communicate with host server with 10Hz sampling frequency with unique low power RF wireless communication protocol. This system is being used for real-time position tracking of clean room users.

Results

Figure 1.

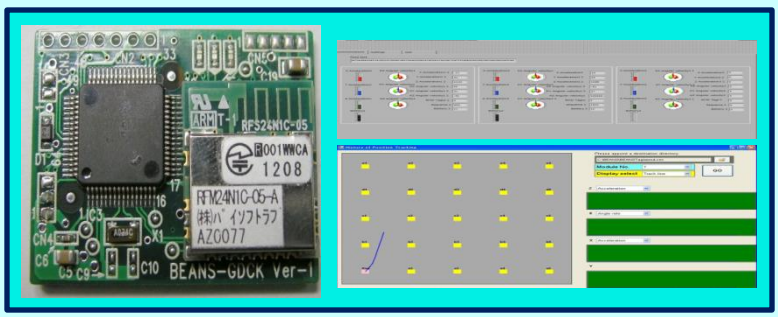

Figure 2.