

Wireless energy monitoring in biped robot based on XBee RF module

ABSTRACT

For mobile and humanoid robots, in the field of analysis, conservation, data monitoring and management of the energy, the need of real time wireless communication for data to access and control is important. Wireless technology, which is widely used not only in close range but also in long range, is a technique which uses electronic components that can interface to the other devices. In this work, the energy sensors, such as voltage and current analogue sensors are connected to the XBee RF module directly to reduce the power consumption and the complexity. The wireless XBee RF module together with the sensors were utilized in such a way that direct coupling and data processing have been used to send the energy values wirelessly for monitoring or managing station which may be considered as a computer. A significant clear signals for the current and voltage rates were harvested from the developed circuits and to compare with the direct oscilloscope measuring method. The suitable setting up of the components selection and configuration were the main reason for this method to success. The contribution of this proposed method is the utilizing of the XBee built-in microcontroller at the remote and base XBee's modes to dispense about any other microcontroller or extra components.

Keyword: Biped robot; Wireless; Energy; Monitoring; Zigbee