Abstract

Real time monitoring and feedback are important issues for athletes and coaches in order to access the optimum performance. Table tennis strokes for different phases including (forehand and backhand drive, forehand and backhand push, forehand and backhand topspin) are important to be monitored and calculated in real time. nCore 2.0 wearable wireless sensor that is designed in the center for wireless monitoring and applications at Griffith university is used with some hardware and software modifications. This sensor is used after adding the 2.4 GHz module in order to send real time data. The sensor is connected on an athlete wrist and the RF signal strength is measured using the RF explorer (RF handheld spectrum analyzer) in order to design embedded system for real time monitoring and feedback. Data is wirelessly transmitted to a tablet on the coach’s hand in real time. The flexible sensor allows for recording, analyzing kinematics information on the racket motion and finally sending it in real time to a coach. Experiments are conducted in order to monitor the 2.4 GHz signal strength. The results showed that this system is feasible to build a reference motion database which is very useful for athletes and coaches.
Towards Embedded System for Real-time Feedback in Table Tennis Based on 2.4 GHz Wireless Sensor

References


Index Terms

Computer Science

Embedded Systems

Keywords

Embedded Systems, Table Tennis, Wearable Wireless Sensor, Real time Monitoring and Feedback, Wireless Link Reliability.