基于无线USB的多点脉搏信号检测

作　者：李伟博, 吴效明

单　位：华南理工大学

摘　要：

目的：为了弥补单探头传感器反映脉搏信息局限和RS232串口数据传输速率低、移动性差的缺陷，设计了基于无线USB的多点脉搏信号检测系统来采集三维立体脉搏信号。方法：文中采用五点式PVDF压电脉搏传感器获取脉搏信号，使用ZigBee无线技术和USB接口技术传输数据。构建五点式压电传感器成中心点加四点矩阵分布的格局，应用EZ-USB FX2芯片作为USB接口芯片来构建协调器单片机CC2430和上位机的数据管道，使其工作在SLAVE FIFO模式。结果：在界面上设置好采样时间，单击采样时间按钮可将采样时间命令下传给单片机CC2430。单击显示按钮可在界面上显示上传的脉搏波形。结论：本系统可实时检测三维立体脉搏信号，且机动灵活性好。

关键词：脉搏信号检测;五点式PVDF压电脉搏传感器；ZigBee无线技术；EZ-USB FX2

The multi-point pulse signal detection based on wireless USB

Author's Name:

Institution:

Abstract:

Objective In order to make up for the shortcomings that the information reflected by the single probe pulse sensor is limited and the flexibility of the serial port RS232 is poor, we design the system. Methods we gather the pulse signals with the five points PVDF-piezoelectric sensor and transfer the data using the USB interface technology and the wireless technology of ZigBee. We build the data channels between the coordinator chip CC2430 and PC by applying the chip EZ-USB FX2 as the USB interface chip. Results After the sampling time interval set and the button of sampling time clicked, the packets of sampling time interval will be passed down to the chip CC2430.If you click the button of display, you can see the pulse wave uploaded displaying on the screen. Conclusion This system can detect the three-dimensional pulse signal in real time and its mobility is plenty good.

Keywords: pulse signal detection Five-point PVDF piezoelectric pulse sensor the wireless technology of ZigBee EZ-USB FX2

查看pdf文件