Abstract

Recently, healthcare monitoring systems have utilized the modern wireless networks and internet technologies. One of the most developed applications in the healthcare monitoring systems is the fetal heart beat detection. The fetal heartbeat signal contains potentially precise information. This information could assist clinicians in making more appropriate and timely decisions during pregnancy period and labour. The continuous change in the fetal heartbeat signals during the pregnancy period pushes the researchers to focus on building the out-hospital monitoring system. This paper proposes an implementation of out-of-hospital fetal electrocardiogram (FECG) monitoring system. The proposed monitoring system comprises of an acquisition part and data transfer part. The acquisition part acquires FECG signal through use a Least Mean Square (LMS) based adaptive filter. In addition, this part has been written in MATLAB graphical user interface (GUI) to simplify the system usage by pregnant women. The other part uses the internet based web page to transmit FECG data to physicians for monitoring, diagnosis and pregnant care at a significantly low cost, regardless the location of pregnant women. Moreover, a database could be built at the hospital to manage the patients and physicians reports and decisions.
References

Index Terms

Computer Science  Signal Processing

Keywords

Fetal electrocardiogram (FECG)  fetal heart rate (FHR)  out-of-hospital  health care monitoring.