

SELECTED TOPICS IN ADVANCED ELECTRONICS

Edited by
Khalid A. S. Al-Khateeb



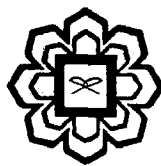
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CHAPTER 24

MEDICAL CARE SYSTEM FOR REMOTE MONITORING OF FOETAL ECG

By

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Synopsis

One of the major health care problems that have been identified in less developed countries (LDCs) is the high risk of late diagnosis and late procedural action, which invariably have fatal consequences. Stillbirth due to insufficient timely emergency medical care, will be considered here as an example of how lives could be saved when problems are diagnosed in time. The regular check-up of foetal electrocardiography (FECG) provides a strong means of prevention. Much research work is aimed at implementing simple, customized and portable emergency medical care kit for FECG monitoring from remote locations. Its mode of operation is the acquisitions of the AFECG signal from the abdominal wall of the pregnant mother (patient). The local terminal then transfers the AFECG signal as data to the remote terminal, where an expert physician performs the diagnosis. At the remote terminal, the FECG signals are extracted from the AFECG by software, which has been developed for this purpose. In this case, the computer network establishes a bridge between the patient and a distant physician. A network program based on the client/server applications was also developed. It is capable of supporting both the AFECG data transfer and an online chat session simultaneously. A physician at the remote terminal can diagnose the FECG signal and provide instructions to the local terminal in case of emergency. A number of cases studied by this system was found to give approximately same result as commercial system.