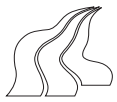
AALBORG UNIVERSITY
INSTITUTE OF ELECTRONIC SYSTEMS, I8
DEPARTMENT OF COMMUNICATION TECHNOLOGY
Fredrik Bajers Vej 7 • DK-9220 Aalborg Ø • www.ies.auc.dk



Title:
EKG 2000

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Microprocessors

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Project group:
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Group members:
Lars Klitgaard Jakobsen
Christian Corfits Jensen
Kenneth Kristensen
Peter Ilsøe Nielsen
Jan Ozimek
Thomas Søhus

Supervisor:
Preben Blichert-Toft

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Abstract:
This report documents the design of an ECG monitor that is able to display up to eight persons ECG signals.
Parts of the system are not able to process signals from more than one person, due to limits in the hardware.
The system is based on a Motorola 68000 microprocessor, which uses the collected data to calculate the connected patients pulses. The calculated pulses are monitored, and if they exceed some predefined limits, an alarm is given. To warn the medical personnel, the alarm is both visual and audible.
The report starts with the construction of an amplifier, which amplifies the signal from the patient to a level that the rest of the system is able to process.
Next a unit to convert the amplified analog signals to digital signals is constructed. Moreover this unit has to give both a visual and audible alarm if the limits are exceeded.
Part of the operating system and applications to calculate the pulse, is written for the microcomputer. These programs are written in assembler and in C.
The user interface consists of a PC with an application, that displays the relevant information. The PC program is programmed to show the ECG signals from the patient, and to send pulse limits to the microprocessor. The PC program is written in C.
The microcomputer is connected to the PC via a RS232C connection.