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Title	Physical Model-based Study on Non-Contact Electrocardiogram Measurement of Low Birth Weight Infants in Incubators through a Cloth
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Abstract

In the measurements of low birth weight infants, some non-body-worn electrodes or sensors are preferred because their attachment can lead to sudden change in the condition of the infants. The authors of this paper measured and compared the capacitive electrocardiogram signals from a mock-up infant model with a low birth weight through a cotton towel using a sheeting electrode with a driven shield and an old and a new type of analog front ends (AFEs). By reducing the total gain of the measurement system from 40 to 20 dB and replacing the earlier AFE with a new one, ECG waveforms that involved P, R, and T waves were observed from the 1600-g mock-up model. Repetitive R waves were also observed from the 700-g mock-up model un-der the same system.