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(57) Abstract:

ABSTRACT APPARATUS AND METHODS FOR NOISE-AWARE AND ENERGY-EFFICIENT PULSE RATE VARIABILITY AND HEART RATE VARIABILITY ANALYSIS The present invention relates to a quality-aware ECG/PPG signal processing system for reducing false alarm and an accurate estimation of HRV/PRV. The system includes a noiseaware heart rate variability module, a pulse rate variability analysis module, a Noise-Aware RR interval (RRI) module, a pulse-to-pulse interval (PPI) module and a Signal Quality Assessment module. In operation, the noise-aware heart rate variability and the pulse rate variability analysis module configured for measurement of HRV/PRV indexes by using the quality-aware or noise-aware RRI and/or PPI extraction and HRV-PRV fusion for improving robustness, and energy consumption reduction.