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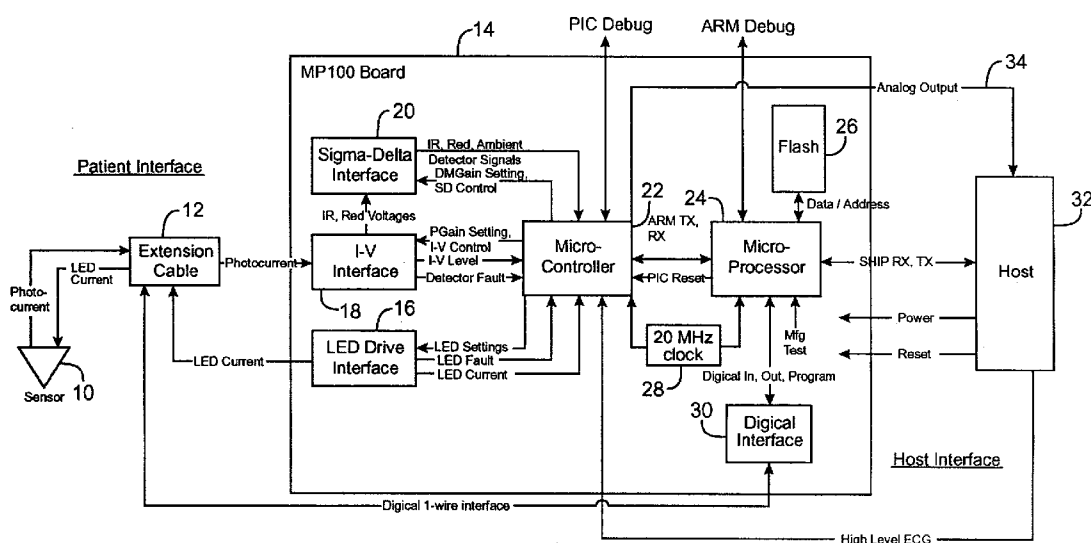
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[Continued on next page]

(54) Title: MULTI-BIT ADC WITH SIGMA-DELTA MODULATION



(57) Abstract: An oximeter uses a sigma-delta modulator and a multi-bit ADC with PWM feedback enabling high precision multi-bit conversion. Demodulation is done in software, thus requiring only a single hardware path for both red and IR. Multiple capacitors are switched into the integrator in the sigma-delta modulator, with different capacitors for red, IR and dark signals, thus enabling the use of the single hardware path. A switching circuit at the input of the sigma-delta modulator acts as a sample and hold, controlled by the PWM feedback.



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