

## Integrated Analog Front-End for Heart Rate Monitors and Low-Cost Pulse Oximeters

### FEATURES

- Fully-Integrated Analog Front-End for Pulse Oximeter Applications
- Receiver:
  - High Accuracy Current to Frequency Converter up to 500kHz
  - Automatic Ambient Light Cancellation
- Transmitter:
  - Flexible Pulse Sequencing and Timing Control with Integrated LED Driver (H-Bridge)
  - 95dB Dynamic Range
  - LED Currents Programmable with an External Resistor and Analog Input Voltages
- Power Supplies: 2.5V to 5.5V
- Low Power: 1.25mA at 3.3V Supply
- Specified Temperature Range: -40°C to +85°C
- Package: QFNWB3x3-16L

### APPLICATIONS

- Low-Cost Medical Pulse Oximeter Applications
- Optical HRM

### PRODUCT DESCRIPTION

The TS9516 is a fully-integrated analog front-end (AFE) that is ideally suited for pulse oximeter applications. The device consists of a low-noise I/F converter and a LED transmitter section. The I/F converter converts photodiode current to a square wave frequency signal. The LED transmitter currents can be easily controlled through analog input voltages. The TS9516's flexibility allows users to have complete control of the device's timing characteristics. The TS9516 is an AFE solution in QFNWB3x3-16L package and is specified over the operating temperature from -40°C to +85°C.

