General Description

The operation of the AS7000 is based on photoplethysmography (PPG), an HRM method which measures the pulse rate by sampling light modulated by the blood vessels, which expand and contract as blood pulses through them. Unlike existing optical AFEs which produce raw PPG readings, the AS7000 integrates a digital processor which implements algorithms developed by ams. These convert the PPG readings into digital HRM and HRV values.

The AS7000 module includes the LEDs, photo-sensor, analog front end (AFE) and controller as well as application software required to implement an accurate optical HRM/HRV fitness band product. In addition to HRM/HRV, the module also enables skin temperature and skin resistivity measurements by providing interfaces to external sensors.

The AS7000's low-power design is particularly well suited to application in fitness bands, smart watches and sports watches, in which board space is limited and in which users look for extended, multi-day intervals between battery recharges.

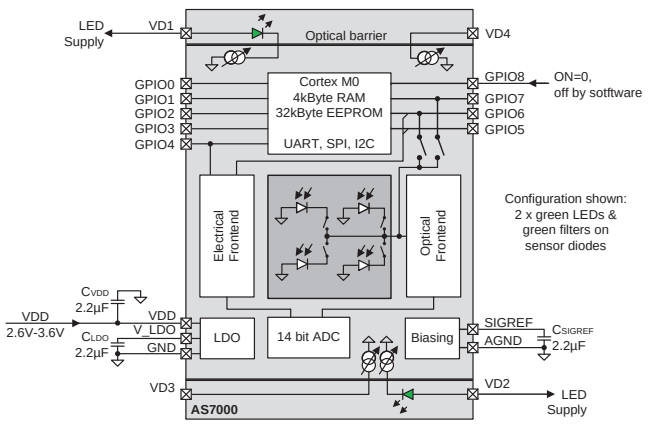
Applications

- Optical heart rate monitor
- Medical sensors
- Chemical sensors
- Handheld "point of care" devices
- Industrial sensors

Features

- Single device integrated optical solution
- Analog optical front end
- Analog electrical front end
- Hardware sequencer
- Powerful 32bit Cortex-M0 processor
- Synchronous detector
- Integrated LED driver with current control
- Optical filters

Block Diagram



Benefits

- Enables smallest application size
- Industry-leading HRM measurement quality
- Provides valuable additional information for end user
- Long Operating Time
- Works reliably with ambient light

Ordering Code	Type	Marking	Delivery Form	Delivery Quantity
AS7000-AA	AS7000	XXXXX[1]	Tape & Reel	5000pcs/reel
AS7000-AAM	AS7000	XXXXX[1]	Tape & Reel	500pcs/reel

[1] XXXXX - Tracecode backside marking

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