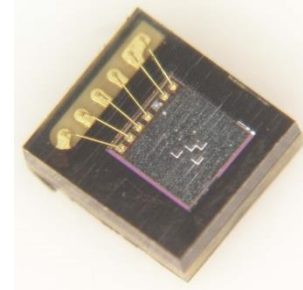


## Brief Description

The ZOPT2201 Sensor integrates an ambient light sensor (ALS) and ultraviolet energy sensor (UVBS). The device can be connected via an I<sup>2</sup>C interface to an external microcontroller. Other I<sup>2</sup>C or SMBus devices can be connected to the same interface. The device has a programmable interrupt with hysteresis to respond to events and reduce the microcontroller tasks.

A major application of the device is in smart phones or other mobile devices to enable brightness control of display panels (ALS) and diverse health care applications or contextual awareness algorithms (UVBS).



## Features

- High ambient light and UVB energy sensitivity
- Superior infrared energy suppression
- Very stable spectral response over angle of light incidence
- Wide dynamic range
- Excellent temperature compensation
- Lowest conversion repeat noise
- I<sup>2</sup>C interface capable of standard mode (100kHz) or fast mode (400kHz) communication; 1.8V logic compatible
- Programmable interrupt function for ALS and UVBS with upper and lower thresholds

## ALS Features

- Integrated ALS closely matches human eye response for high lux accuracy over different light sources
- Absolute sensitivity: 0.008 lux to 157000 lux
- Configurable output resolution: 13 to 20 bits
- Configurable analog gain: x1 to x18
- Linear output code
- 50Hz/60Hz light flicker immunity
- Fluorescent light flicker immunity

## UVBS Features

- Linear UV index measurement (1 to >11)
- Tailored temperature compensation

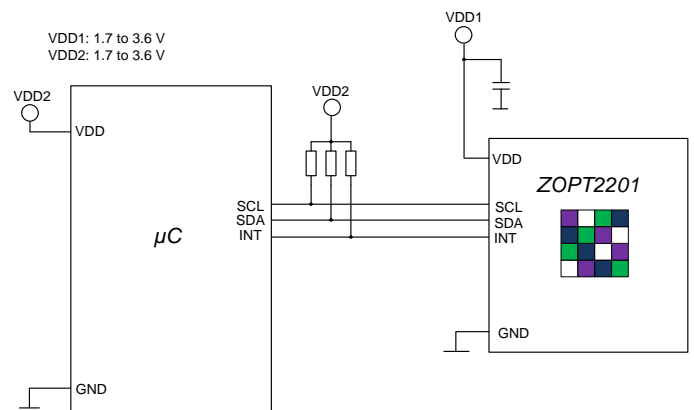
## Physical Characteristics

- Wide operation temperature: - 40°C to +90°C
- Wide supply voltage: 1.7V to 3.6V
- Minimum active current at maximum duty cycle:
  - ALS: 110µA typical
  - UVBS: 100µA typical

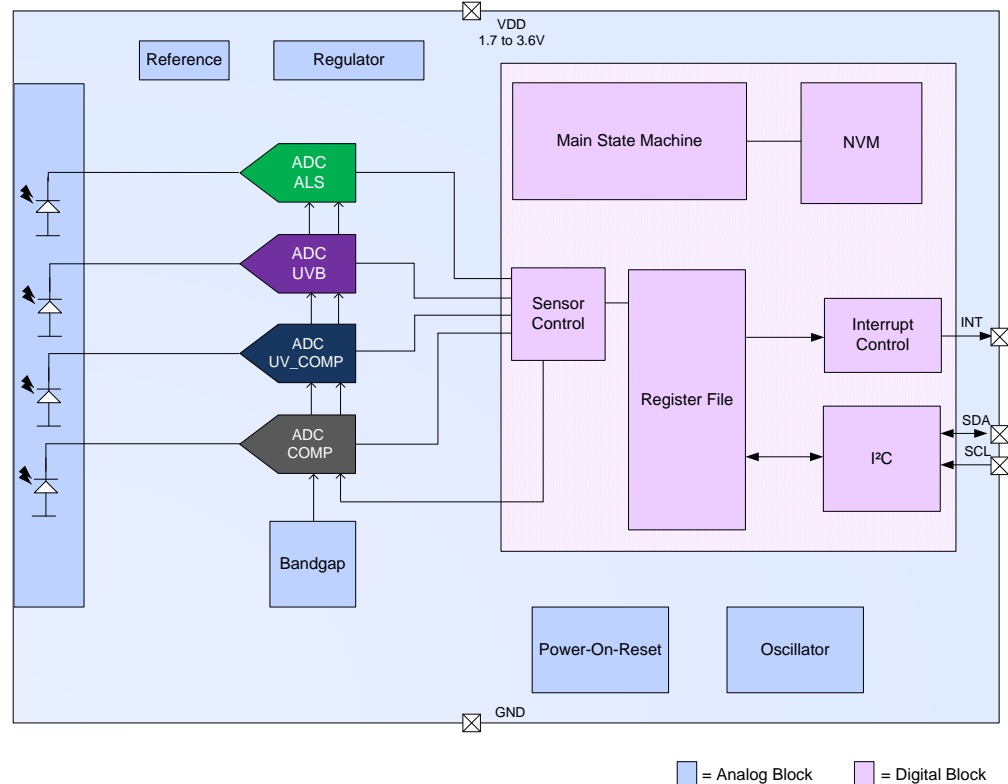
Note: Average current is proportionally lower with lower measurement rates.

- Low standby current: 1µA typical
- Packages:
  - LGA6 (2.0 × 2.2 × 0.7 mm)
  - TSV (1.1 × 1.2 × 0.26 mm)

## ZOPT2201 Application Circuit



## ZOPT2201 Block Diagram



### Applications

- Cellular phones
- Notebooks
- Consumer devices

## Ordering Information

| Product Sales Code | Description   | Delivery Package |
|--------------------|---|------------------|
| ZOPT2201AC5R       | ZOPT2201 LGA6 – Temperature range: -40 to +90°C   | Reel             |
| ZOPT2201AC9R       | ZOPT2201 TSV – Temperature range: -40 to +90°C  | Reel             |
| ZOPT2201KIT V1.0   | ZOPT2201 Evaluation Kit, including ZOPT Control Board, mini-USB cable, and 1 ZOPT2201 sample mounted on the LGA6 Sensor Board; kit software is available for free download – see the <i>ZOPT Evaluation Kit Quick Start Guide</i> included in the kit for instructions. |                  |



### Corporate Headquarters

6024 Silver Creek Valley Road  
San Jose, CA 95138  
[www.IDT.com](http://www.IDT.com)

### Sales

1-800-345-7015 or 408-284-8200  
Fax: 408-284-2775  
[www.IDT.com/go/sales](http://www.IDT.com/go/sales)

### Tech Support

[www.IDT.com/go/support](http://www.IDT.com/go/support)

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