Brief Description

The ZOPT2201 Sensor integrates an ambient light sensor (ALS) and ultraviolet energy sensor (UVBS). The device can be connected via an I²C interface to an external microcontroller. Other I²C 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.

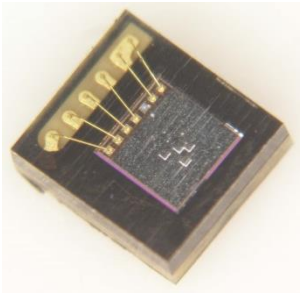
A major application of the device is in smart phones or other mobile devices to enable brightness control of display panels (ALS) and diverse health care applications or contextual awareness algorithms (UVBS).

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
- I²C 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

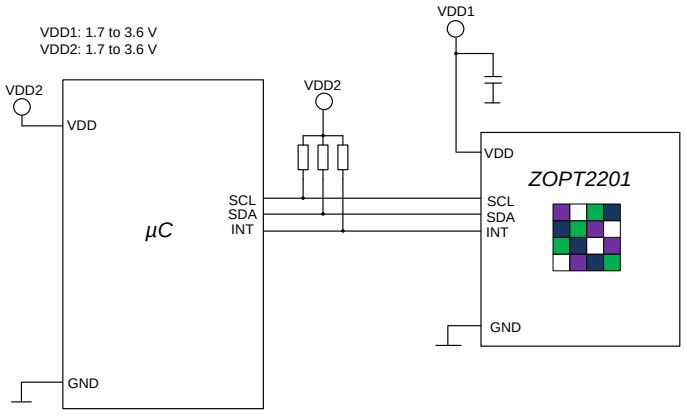
- Linear UV index measurement (1 to >11)
- Tailored temperature compensation

Physical Characteristics

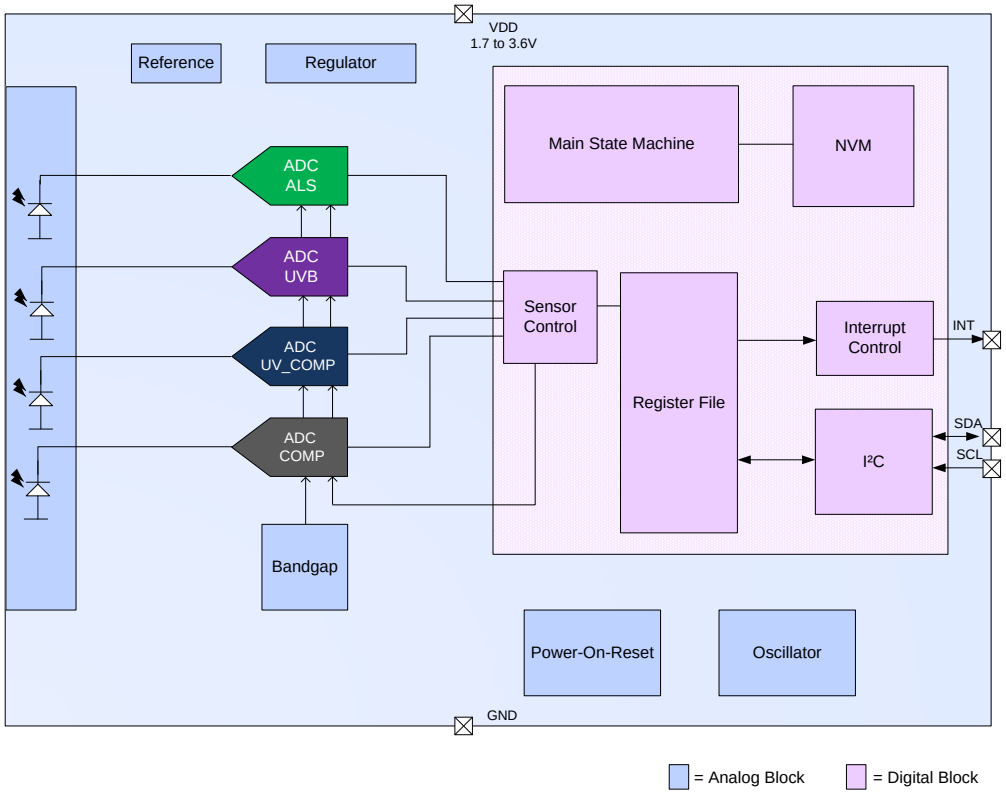
- Wide operation temperature: - 40°C to +90°C
- Wide supply voltage: 1.7V to 3.6V
- Minimum active current at maximum duty cycle:
  - ALS: 110µA typical
  - UVBS: 100µA typical

  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 *ZOPT Evaluation Kit Quick Start Guide* included in the kit for instructions.	

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