

# **UV photodiode evaluation board hardware manual**

V2.0

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## Table of Contents

|    |  |   |
|----|--|---|
| 1. | Brief description of the UV photodiode evaluation board..... | 3 |
| 2. | Interface of the UV photodiode evaluation board.....         | 3 |
| 3. | Measurement range adjustment of the evaluation board .....   | 4 |

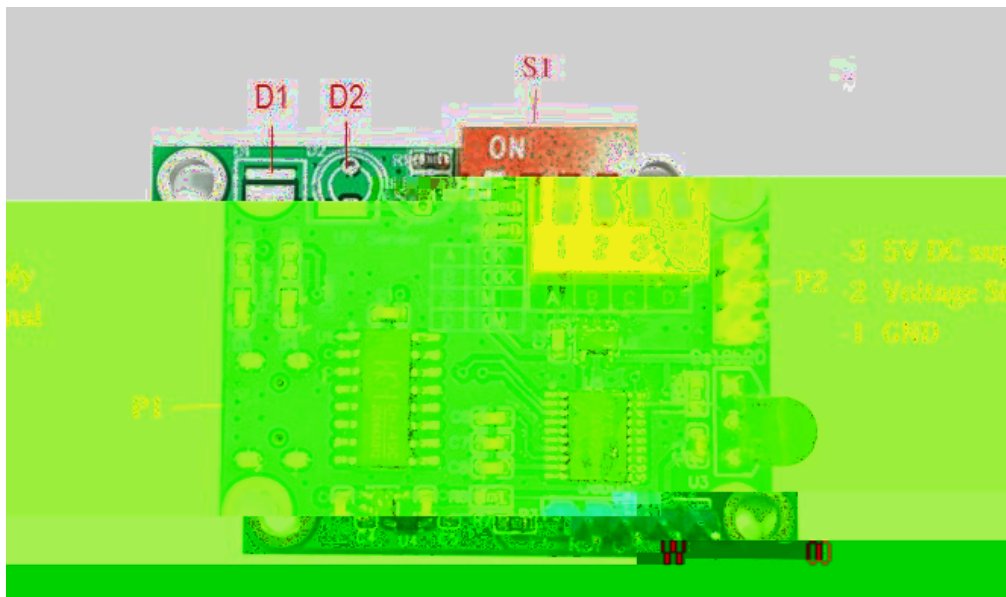
## Revision History

| Version No. | Date       | Revision          | Remarks |
|-------------|------------|-------------------|---------|
| V1.0        | 2018-9-19  | Draft version     |         |
| V2.0        | 2018-11-12 | Revised version 1 |         |

## 1. Brief description of the UV photodiode evaluation board

The UV photodiode evaluation board has both analog and digital output interface. Analog interface provides voltage signal as a function of UV illumination intensity, while digital interface provides serial communication to PC with direct digital output.

The evaluation board supports two types of UV photodiode package. D1 and D2 are used to mount SMD- and TO-type packaged UV photodiodes, respectively. Users could select one of the two mounting ports for UV photodiode evaluation, while both ports can not be supported at the same time. The temperature sensor on board is used for embedded temperature compensation.



## 2. Interface of the UV photodiode evaluation board

### 2.1 Analog Interface

| P2-1 | P2-2                         | P3-3             |
|------|------------------------------|------------------|
| GND  | Voltage output signal 0~3.3V | 5 V power supply |

Note Port P2 provides analog output signal for UV radiation intensity measurement results.

### 2.2 Digital Interface

Micro-USB port P1 provides digital interface to PC with USB cable connection. Users could use serial communication host software in PC to receive direct measurement data from the evaluation board. The host software and its operation manual can be downloaded from [www.GaNo-OPTO.com](http://www.GaNo-OPTO.com).

### 3. Measurement range adjustment of the evaluation board

The evaluation board supports measurement range adjustment function via dip switch S1. Different setting of S1 corresponds to different load resistance value R, which determines the amplification magnitude of the signal processing circuit. The voltage output (0~3.3V) of the evaluation board is  $V=I \times R$ , where I is the photocurrent from the photodiode under UV illumination.

| <b>S1 Dip Switch</b>   | <b>Load resistance value</b> | <b>UV radiation intensity<br/>@360nm</b> |
|------------------------|------------------------------|--|
| <b>1 ON, other OFF</b> | 10 K                         | 0.001-0.2 W/cm <sup>2</sup>              |
| <b>2 ON, other OFF</b> | 100 K                        | 0.1-20 mW/cm <sup>2</sup>                |
| <b>3 ON, other OFF</b> | 1 M                          | 0.01-2 mW/cm <sup>2</sup>                |
| <b>4 ON, other OFF</b> | 10 M                         | 0.001-0.2 mW/cm <sup>2</sup>             |

Note The above measurement range is calculated based on a specific photodiode (part. No: GS-ABC-3535LQ). If a different photodiode is used, the measurement range of UV power density will be different.