



## Sensor Board Guide for the VEML6031X00

### INTRODUCTION

The VEML6031X00 sensor board is intended to be used in conjunction with Vishay’s SensorXplorer demonstration kit, or as a standalone unit, to evaluate the capabilities of the VEML6031X00 ALS sensor.

### SensorXplorer™

The SensorXplorer (Fig. 1) is a demonstration kit designed to help evaluate Vishay’s digital sensors featured on Vishay’s sensor boards. These boards, along with their respective software modules, can be used to demonstrate and test each sensor’s functionalities, allowing the user to quickly understand how various settings affect the sensor’s results. The SensorXplorer board includes an USB to I<sup>2</sup>C interface chip, a 3.3 V regulator, several indicator LEDs, as well as multiple GPIOs to control the functionality of each board and allow data to be read and displayed on a PC. To get an overview of available sensor boards, as well as to download the software modules and board design files, please visit: [www.vishay.com/optoelectronics/SensorXplorer](http://www.vishay.com/optoelectronics/SensorXplorer). Here you will also find a link next to each board showing its availability at each of our distributors.

Complete information about the SensorXplorer kit as well as all available sensor boards is available at [www.vishay.com/optoelectronics/SensorXplorer](http://www.vishay.com/optoelectronics/SensorXplorer). The same page also allows you to check inventory of SensorXplorer kits and Vishay sensor boards at our distributors.

The SensorXplorer installation guide is available for download from the following link: [www.vishay.com/doc?849222](http://www.vishay.com/doc?849222)

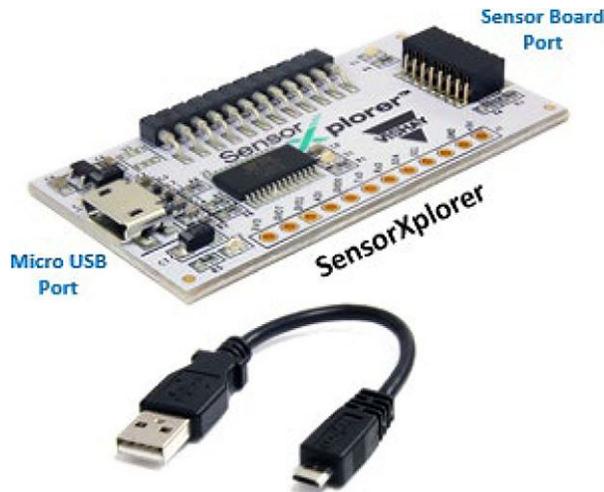


Fig. 1 - SensorXplorer

### USING THE SENSOR BOARD WITH THE SensorXplorer

Following the instructions in the SensorXplorer installation guide, install the SensorXplorer software on your PC, then connect the SensorXplorer evaluation board to your PC and the Vishay sensor board.

The respective demo board software module can then be downloaded from: [www.vishay.com/landingpage/SensorXplorer/](http://www.vishay.com/landingpage/SensorXplorer/)

Once the module is unzipped the software can be run without the need for further installation.

You are now ready to explore the sensor and its different settings to see how they will work in your application.

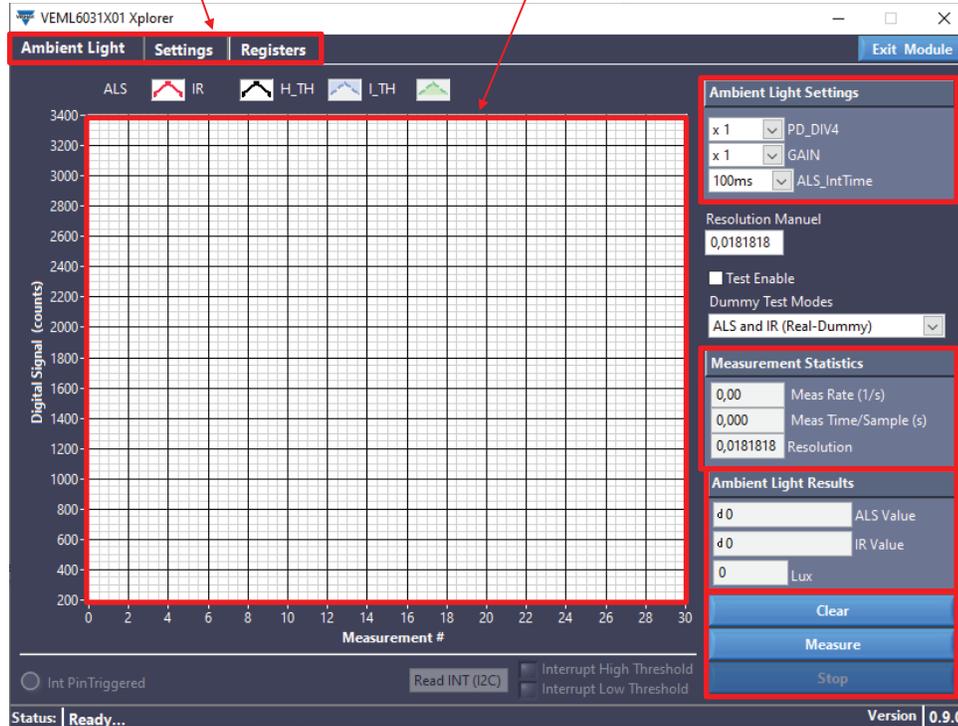


## HOW TO USE THE DEMOSOFTWARE

Tabs to switch between the various functions of the software module

Graph plots the results of the active measurement

Controls to change the settings of the ALS sensor



Displays the measurement results of the different channels

Displays the ambient light results of the different channels

Controls to active measurements and clear the graph

Fig. 2 - Demosoftware GUI

## USING THE SENSOR BOARD FOR ITSELF

If you want to use the sensor board within your own application and with your own I<sup>2</sup>C master, simply connect the board to a power supply (3.3 V, GND) and the I<sup>2</sup>C lines (SDA, SCL) as shown in Fig. 3.

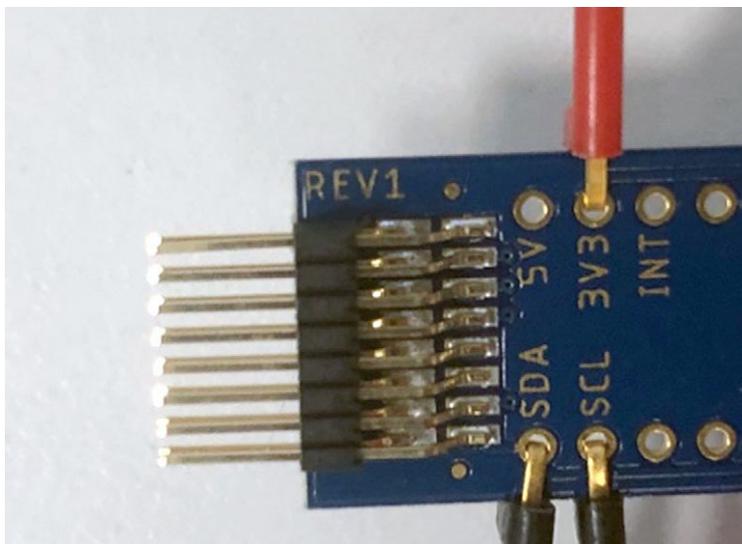


Fig. 3 - Connection of the Sensor Board (power supply and I<sup>2</sup>C lines)

## SCHEMATIC OF THE VEML6031X00 SENSOR BOARD

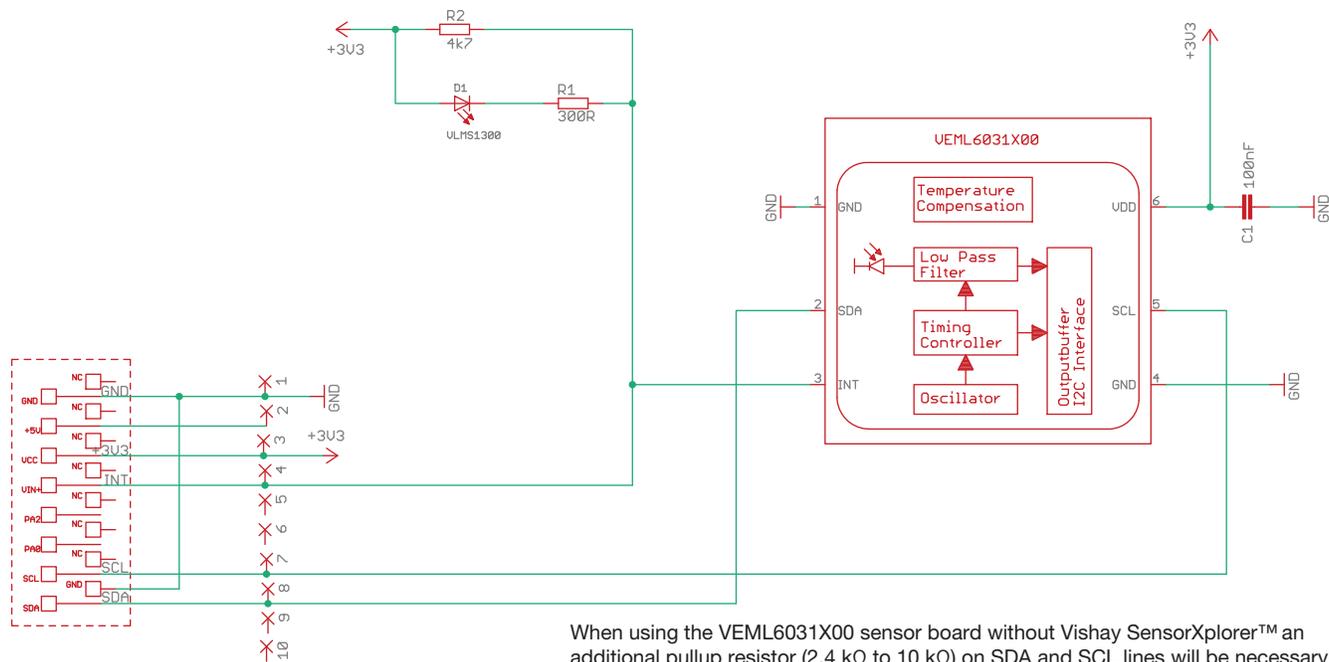
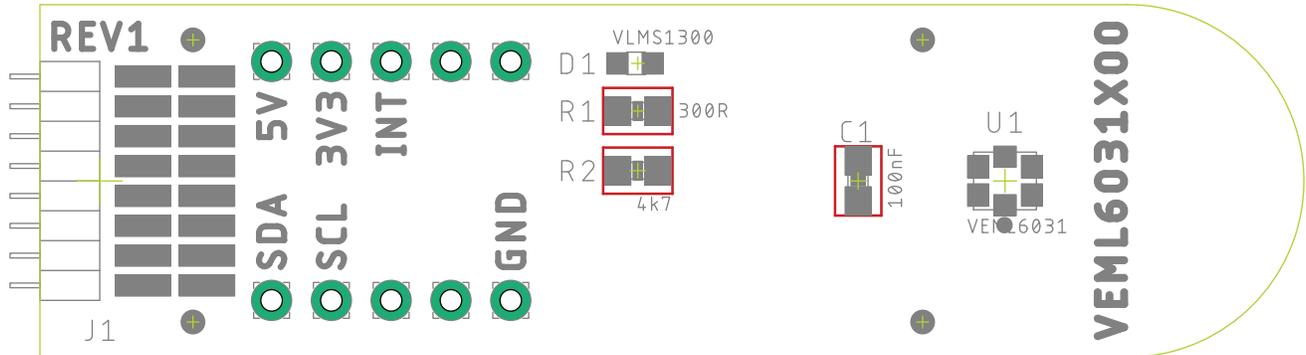


Fig. 4 - Schematic of the Schematic of the VEML6031X00 Sensor Board

## ASSEMBLY OF THE VEML6031X00 SENSOR BOARD

VEML6031X00 sensor board, rev. 1.0



Assembly top

BILL OF MATERIALS					
ITEM	QUANTITY	REFERENCE	COMPONENT CLASS	VALUE	PACKAGE
1	1	C1	Capacitor	100 nF	C0603
2	1	D1	LED	VLMS1300	VLMS1300
3	1	J1	Edge connector	2 x 8 pos.	SMD Header Strip
4	1	R2	Resistor	4.7K	R0603
5	1	R1	Resistor	300R	R0603
7	1	U1	Sensor	VCNL6031X00	SMD