

Optical Switch Evaluation Kit

Push Button/USB, 1x2/2x2 PCB and GUI

(US patent 8,666,218 and other patents pending)

DATASHEET



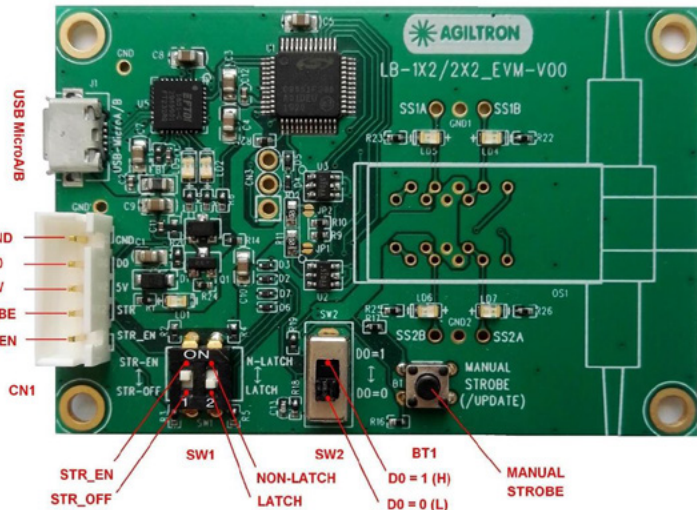
The SW-DR-5 evaluation kit is compatible with LightBend™, Fiber-Fiber™, MEMS, and CrystaLatch™ 1x2/2x2 switches. It has three control modes: manual push button; TTL; USB with a user-friendly GUI Windows™ program. It is intended for convenient laboratory use or switch performance evaluation. The unit has a mini USB connector and a 5-PIN connector. It can be powered by the mini USB connector to a computer or an accompanying cellphone 5V wall plug power supply. It is a cost-effective solution for ease of using our switches. Command code is also provided for customer modification.

Features

- USB Interface
- Push Button
- TTL
- GUI
- Power Supply

Compatibility

- CrystaLatch™ 1x2/2x2
- LightBend™ 1x2/2x2
- MEMS 1x2/2x2
- Fiber-Fiber™ 1x2/2x2



Electrical Specifications

Parameter	Min	Typical	Max	Unit
Operating Temperature	-10		70	°C
Storage Temperature	-40		85	°C
Power Voltage DC	4.9	5	5.2	V

Warning: Control Signal >5.5V Will Damage the Board

Warning: This device must use the reference circuit to driver otherwise it is unstable.

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Rev 11/12/23

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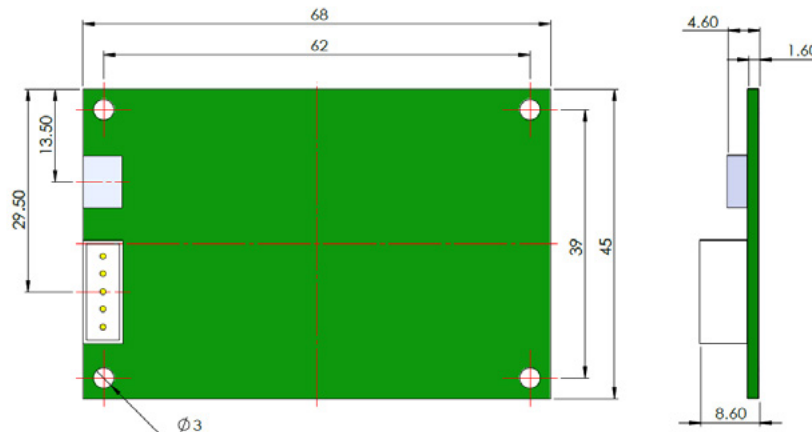
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Mechanical Footprint Dimensions (Unit: mm)



*Product dimensions may change without notice. This is sometimes required for non-standard specifications.

Manual Operation Instruction

- **Power the Board**

The unit can be powered up via the Micro USB port connecting to a computer or a cellphone wall plug power supply.

- **Manual Push Button Control**

When using Manual Push Button Control, SW1-1 should be set to **STR_EN**.

Once the board is powered (LED on), the unit can be easily controlled by pushing the **STROBE** button, the light path will be changed accordingly.

TTL Operation Instruction

- **Power the Board**

The unit can be powered up via the Micro USB port connecting to a computer or a cellphone wall plug power supply.

- **TTL Control**

When using TTL Control, SW1-1 should be set to **STR_OFF**.

The unit can be controlled by a standard TTL Signal. Sending a **HIGH** voltage (>3.5V <5V) to the **D0** pin in the 5 pin connector, and the light path will change. Sending a **LOW** voltage (0-0.8V) to the **D0** pin in the 5 pin connector light path will change again.

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Computer Graphic Software User Guide

- **Install the Program**

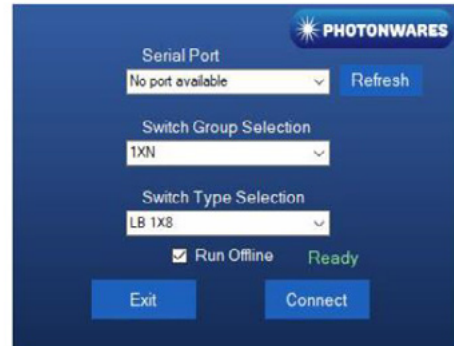
Click on **setup.exe** for the automatic installation, which should be provided with the product.

- **Power and Connect the Board**

Use the Micro-USB to USB cable to connect the board with the PC with software installed. Remember to set SW1-1 to **STR_EN**.

- **Run the Program**

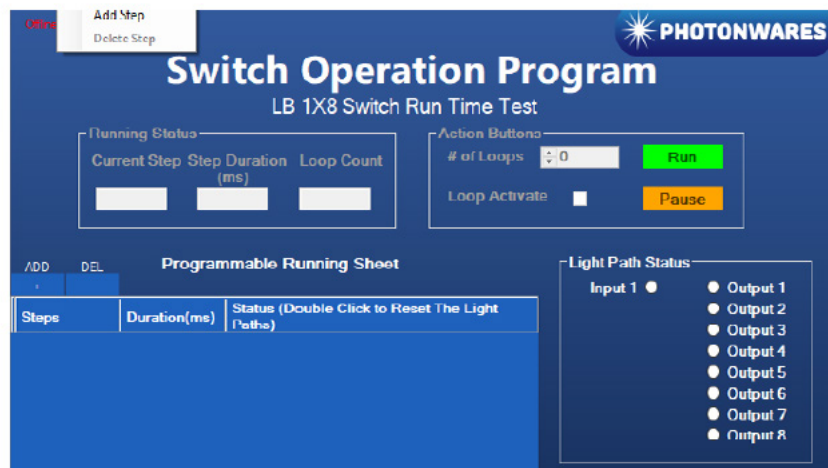
Run the "**Switch Operation Program.exe**" and the program will open the configuration window. Select the correct Switch Group and select the specific Switch Type. Then click the "Connect" button and the program will establish the connection between PC and board.



- **Create and edit testing time sequence**

Add step: Click the "Add Step" button in the menu strip or click the "+(ADD)" button would both add a step to the Programmable Running Sheet.

Delete step: Click the "Delete Step" button in the menu strip or click the "-(DEL)" button would both delete a step in the Programmable Running Sheet.



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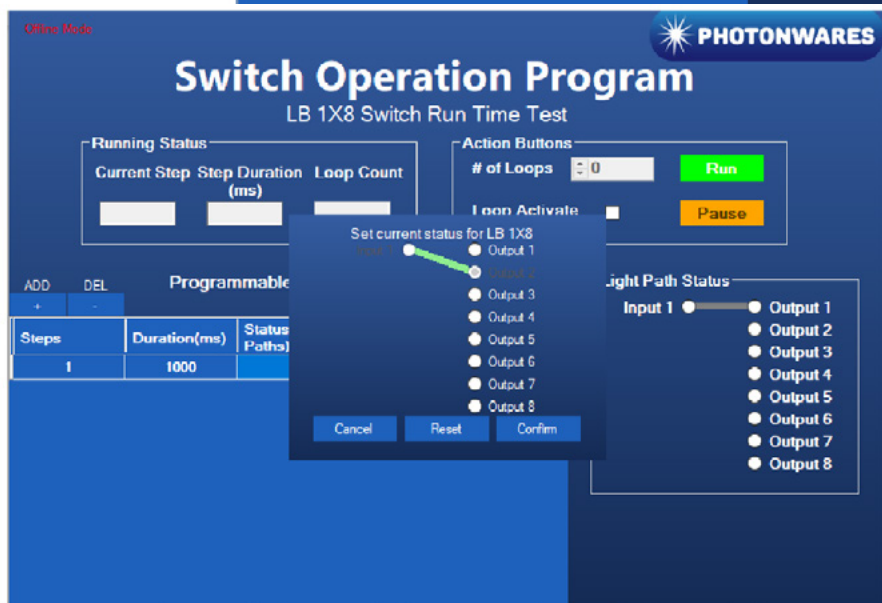
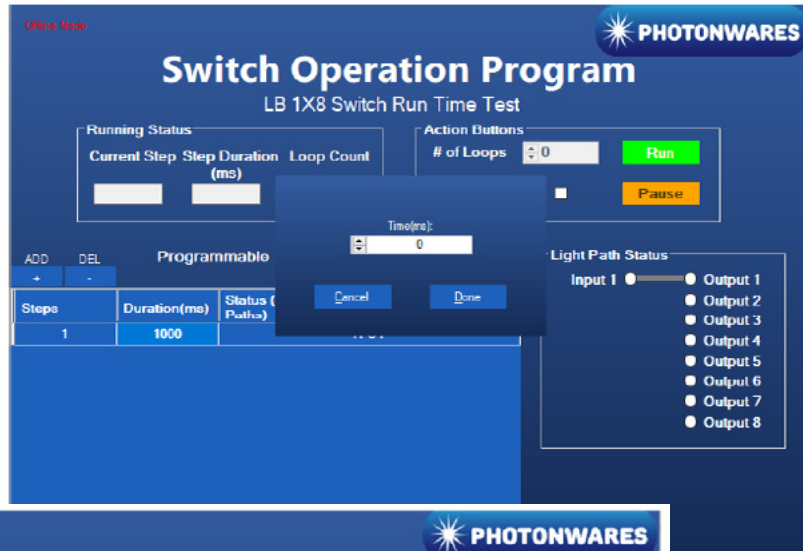
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Computer Graphic Software User Guide (continue)

Edit step: There are two things that you can modify for one step. One is the light path, and the other is the duration for each step. Double click the cell that you want to modify, and the program will allow you to modify the setting.



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Computer Interface Options

The USB interface working as a Virtual COM port which is compatible with LabView, Matlab. We provide **LabView** and **Matlab** interface software at extra cost.

A Windows GUI and UART command list will be provided for test and software development.

Command List

Command in Serial

The serial communication should be set in **9600 baud rate, none parity, 8 data bits, 1 stop bits.**

```
0x01 0x12 0x00 0x01 ---- Switch to status 1
0x01 0x12 0x00 0x02 ---- Switch to status 2
```

In **Matlab**,

Example code as below:

```
s=serialport("COM1", 9600, "Timeout", 5);
Write(s, [1, 18, 0, 1], "uint8");           for status 1
Write(s, [1, 18, 0, 2], "uint8");           for status 2
```

Ordering Information

	1 1	1 1	<input type="checkbox"/>	1	<input type="checkbox"/> <input type="checkbox"/>	1
Prefix	Configuration *	Function	Pluggable pins		Switch Type	Control Mode **
SWDR-	1x2 2x2 Dual 2x2 Dual 1x1		No (solder) = 1 Yes = 2		CL = 11 FF = 12 MEMS Non-Latch = 13 MEMS Latch (built-in driver) = 14 MEMS Latch (non built-in driver) = 18 MEMS R Dual = 19 LB = 15 LB Latch = 16	USB TTL Push Button

* Any 'Configuration' from the list. Please contact our [sales office](#) for your needs (1x2, 2x2, Dual 2x2, Dual 1x1)

** Any 'Control Mode' from the list. Please contact our [sales office](#) for your needs (USB, TTL, Push Button)

NOTE:

- This driver is intended mounted with specific switches, tuned, and tested prior to shipping. It is not designed to be sold separately.
- Pluggable Pins are for temporary making contacts between the PCB and the optical switches. This function adds \$120

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