

Optical Switch Evaluation Kit

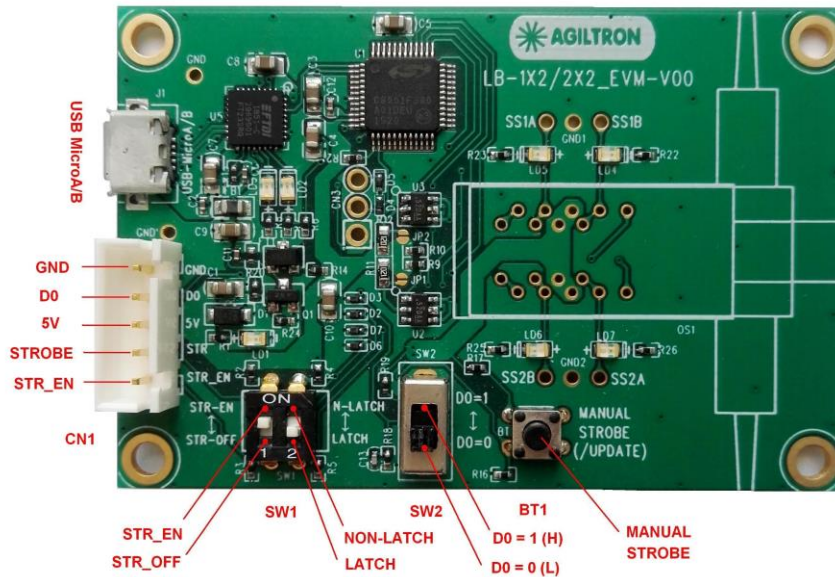
Push Button/USB, 1x2/2x2 PCB and GUI

Product Description

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

Features

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



Electrical Specifications

Parameter	Min	Typ	Max	Units
Operating Temperature	-10	--	70	°C
Storage Temperature	-40	--	85	°C
Voltage	-0.3	--	5.2	V

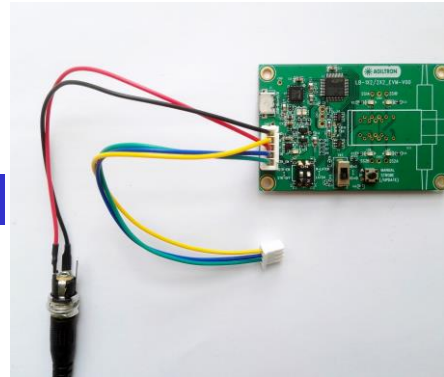
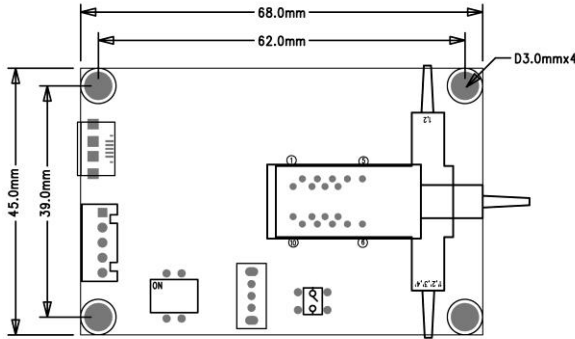
Compatibility

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

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Mechanical Dimension



Advanced Function Guide

- **Powering the Board**

The unit can be powered up via either the Micro USB port or the 5-Pin head with provided cable and wall plug power supply.

- **Electrical Connector Descriptions**

USB Micro-AB connector: Connects to PC with USB cable then the board can be controlled by PC program via a Virtual COM Port

5-Pin Head (CN1): Used for 5V power supply and external TTL control port.

GND: The circuit ground.

D0: External D0 control input.

5V: 5V DC power supply input.

STROBE: External data strobe, effective on rising edge.

STR_EN: External strobe enable, when this pin is pulled up to 5V, the EVM board needs a STROBE signal's rising edge to trigger the controller sampling once for the D0 signal, to cause the controller executing a path change or update action for the optical switch. When the STR_EN is pulled down to GND, STROBE is no function in this mode, level of D0 change will immediately cause an accordant path change on the optical switch.

- **Onboard Switch Descriptions**

BT1: On-board manual STROBE push button.

SW1: Actuator 1 to enable or disable STROBE push button.

Actuator 2 is for selection of non-latching or latching device.

SW2: D0 switch, the actuator at "1"(H) position connects the D0 to 5V or at "0"(L) position connects the D0 to GND.

D0 Driving Table

D0	Optic Path Directing
L (Note 1)	Port 1 → Port 2
H (Note 1)	Port 1 → Port 3

Note 1 H: high level (3.5V~5.5V), L: low level (0V~1.5V).

Note 2 On-board SW1, SW2 and BT1 can be overdriven by CN1 (from external TTL input D0, STROBE, STR_EN)

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Advanced Control Feature

•VCP Control Mode (Connect USB to PC as a virtual COM port)

VCP Settings

Baud rate: 9600 bps, data length: 8 bits, parity: none, stop bit length: 1 bit.

VCP Command Format

Code	Description
0x01	Read Module Address Address = <Dx> <Dy>
0x02	Set Module Address <Dx> <Dy> = 1 ~ 255
0x03	Read Module Serial Number (Higher 2 Bytes) S/N (Higher 2 Bytes) = <Dx> <Dy>
0x04	Read Module Serial Number (Lower 2 Bytes) S/N (Lower 2 Bytes) = <Dx> <Dy>
0x05	Read Module Type. Type = <Dx> <Dy> (m × n switch: n -- first two digits from left; m -- third and fourth digit from left)
0x06	Read Module Version. Hardware Version = <Dx> / 10; Firmware Version = <Dy> / 10
0x11	Read Switch Status <Dx> = 0, <Dy> = 0 or 1 (0: L, 1: H, refer to Table 3.1)
0x12	Set Switch to Status <Dx> = 0, <Dy> = 0 or 1 (0: L, 1: H, refer to Table 3.1)
0x13	Read Switch Positions. <Dx> = 0, <Dy> = 0x01 (L) or 0x02 (U).
0x14	Set Switch Positions <Dx> = 0, <Dy> = 0x01(L) or 0x02 (U).
0x15	Start On-board Cyclic Scan with specified step Interval. <Dx><Dy>: Step Interval number in microseconds, valid range is 10 ~ 65535 (us).
0x16	Stop On-board Cyclic Scan. <Dx><Dy>: 0.
0x22	Read Module Temperature T(°C) = <Dx> <Dy> / 10
0x23	Read Power Supply Voltage V(mV) = <Dx> <Dy>

Table 4.2. VCP Command Codes

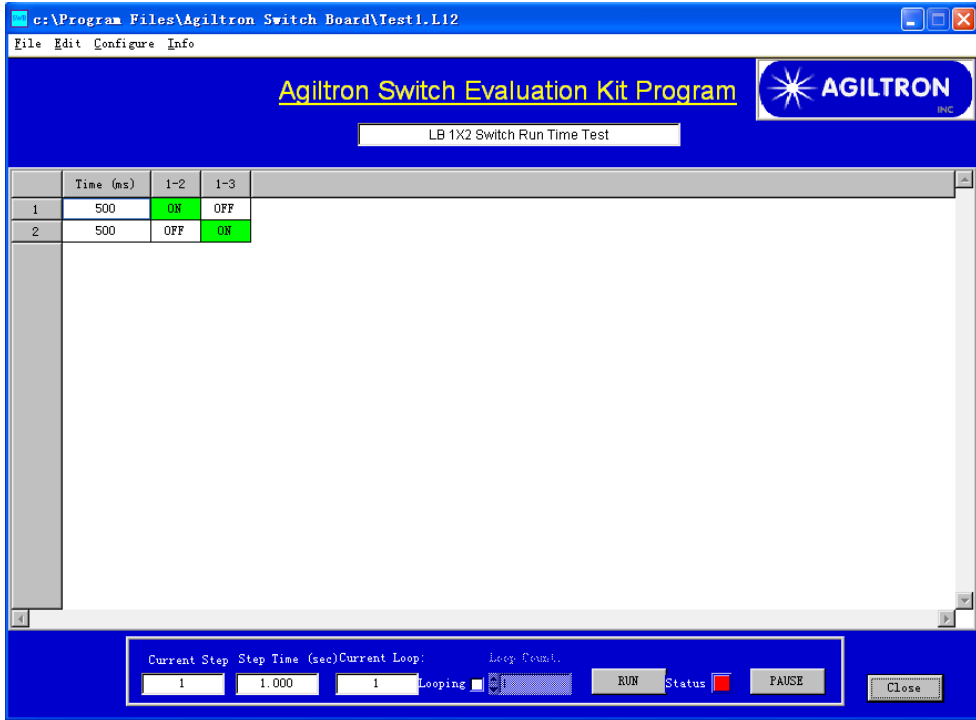
Command (Host to Device):	<Addr>	<Code>	<Dx>	<Dy>	
Response (Device to Host):	<Addr>	<Code>	<Dx>	<Dy>	
<Addr>	One byte module address: 0 for all modules and 1-255 for specified module. Default: 1				
<Code>	One byte control instruction code: Refer to Table 4.2. Command Codes.				
<Dx>	One byte parameter data, higher byte.				
<Dy>	One byte parameter data, lower byte.				

Optical Switch Evaluation Kit Circuit Board and Software



Graphic Software User Guider

Establish communication Connecting a USB cable between the computer and the Micro USB Port on the PCB.
Install the program Insert the USB memory card into the computer and click the software to install.
Start the program Start the program “Agiltron Switch Board.exe” on desktop or in “SwBoard” folder from the Windows START button. This page establishes a connection between the computer and a specific switch type. The program opens the page shown below.



Run Switching Sequence The switching can be set in sequence with time integral setting and the recipe can run in either one process mode or looping mode by inputting the number in the looping box. The recipe can be saved into file.
Control Functions Clicking on “RUN” “STOP” “PAUSE” is to start, stop or pause the switching sequence.

Ordering Information

SWDR-	1 1	1 1	1	1	1 <input type="checkbox"/>	1
	Switch	Function	Size(mm)		Switch Typ	Control Mode
	1x2 2x2 Dual 2x2 Dual 1x1				CL =1 FF= 2 MEMS =3 MEMS Latch = 4 LB =5 LB Latch = 6	USB TTL Push Button