menlomicro

MM5620/MM5622 EVK

Evaluation Kit Instructions v3.2
September 2024

Introduction to MM5620 EVK

The MM5620/MM5622 EVK is an easy-to-use EVK that enables access to the HSx and MSx channels of the MM5620/MM5622 excluding the LSx channels.

All LS pins – LS1A, LS1B, LS2A, and LS2B, are directly connected to Ground through a 50Ohm termination resistor, any signal path connected to the LS port cannot be tested using the MM5620/MM5622 EVK board.

The top layer of the PCB where the RF traces are located is fabricated from a low-loss dielectric.

Note: The attached board with RF lines should not be used as a calibration board for the VNA, it is intended to help model the equal-length RF lines.
Rudimentary amplitude de-embedding can be accomplished by measuring the 2X Thru lines and doing a relative measurement of the insertion loss.

To simplify the evaluation process, the EVK features power and control over the USB connector. No external power supply is required.

NOTE ON MEASUREMENT INSTRUMENTATION:

The MM5620/MM5622 devices are ESD-sensitive devices. Wrist strap and ESD-safe work surfaces must be used.

During the evaluation, it is best practice to open or close the device with zero voltage across the terminals. It is possible to open or close switches with up to 0.5 V across the terminals without lifetime degradation. See the datasheet (available at MenloMicro.com) for full hot-switching specification details. Opening or closing the switch with a VNA sweep active is generally a safe practice.

For resistance measurements, a DMM may be used to measure the switch once it is turned on. The center connector of the RF connector is a good place to attach the test leads.

Starting up the EVK

In an ESD-safe environment, remove the EVK from the ESD bag.

Install the control software from the included USB memory stick. An automatic installer is provided.

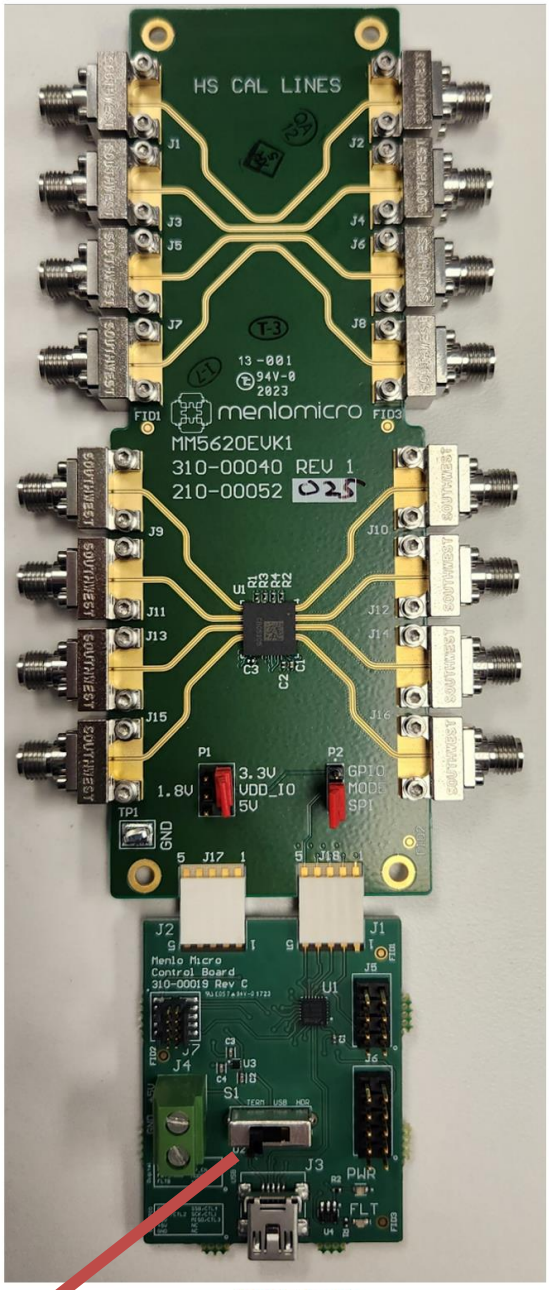
Connect the EVK and the computer with the USB cable. A small LED on the EVK should light up and indicate a presence of 5.0 V.

Start the software and select the board you are using (MM5620/MM5622 EVK)
A control screen shows the channel assignment and status of all switches.

A VNA can be used for RF performance evaluation.

High-performance BERT and wide-band oscilloscopes can be used to perform differential eye diagram tests for high-speed differential signaling protocols.

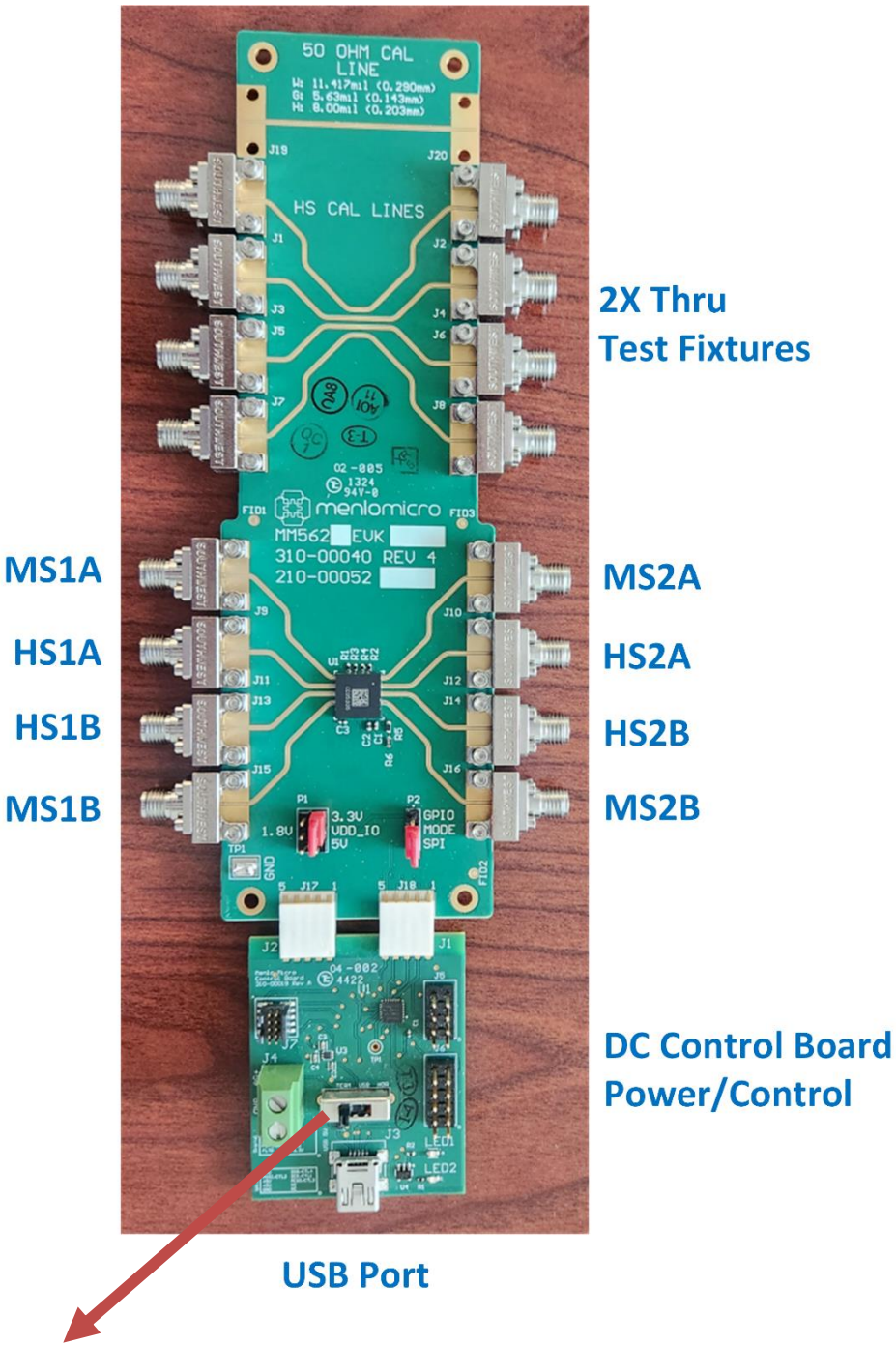
MM5620 EVK1 WITH ATTACHED DRIVER BOARD



S1: 5V Source Control

- Left (TERM): +5V_SPI from pin4 and pin6 of the J6.
- Center (USB): +5V_USB from the USB connector.
- Right (HDR): +5V_PWR from the J4.

MM5620/MM5622 EVK2 WITH ATTACHED DRIVER BOARD



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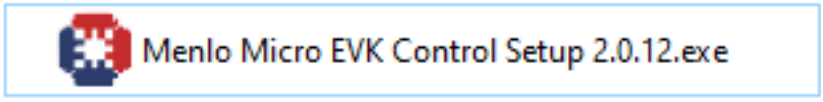
STEP-BY-STEP PROCEDURE:

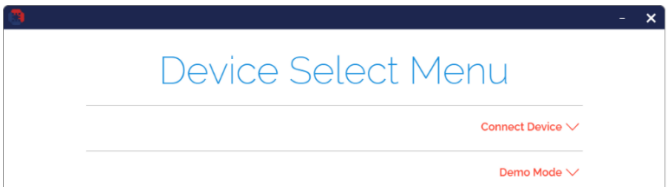
1. Using the files found on the USB memory stick included in this kit, install the Menlo Micro EVK Control Software V2.0.4 or later version on your computer.

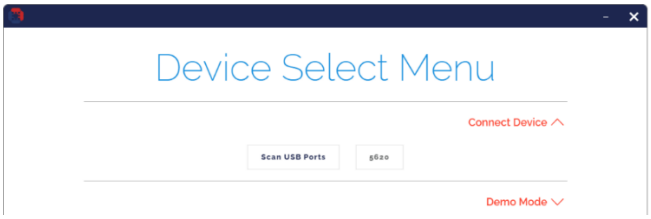


2. In an ESD-protected environment, remove the MM5620 board from the ESD bag.

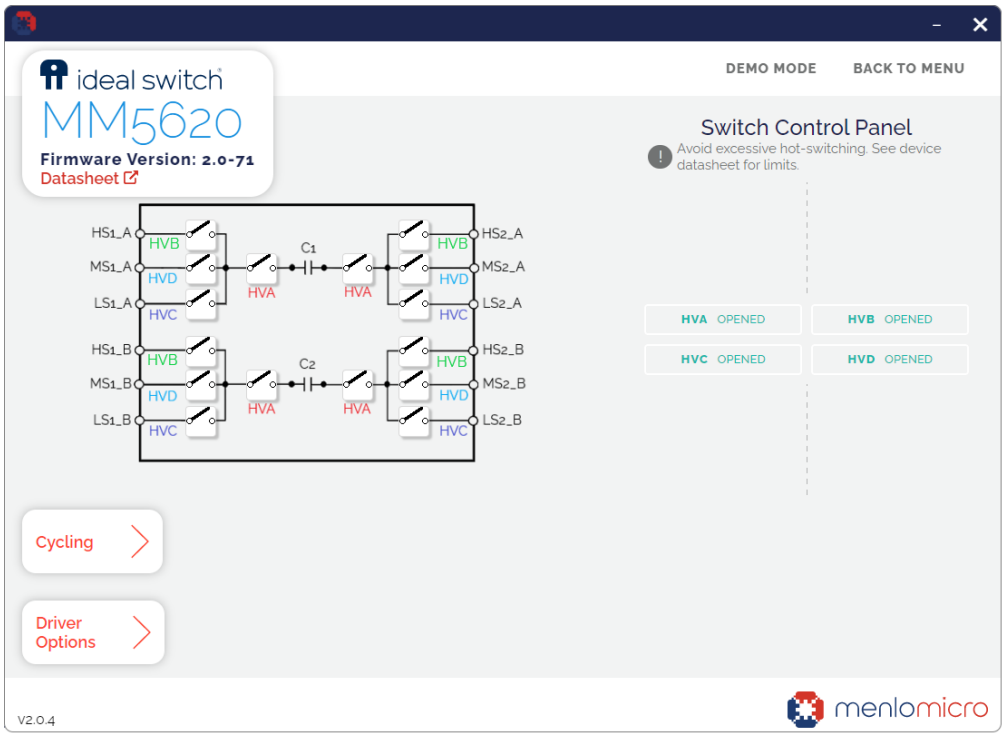
3. Install the USB cable between the Evaluation Board and your computer. The angled mini-USB provides clearance between the connector and RF measurement cables. When the EVK is connected to the Computer, the LED Power Indicator lights up in the presence of a 5.0 V supply voltage from the computer.

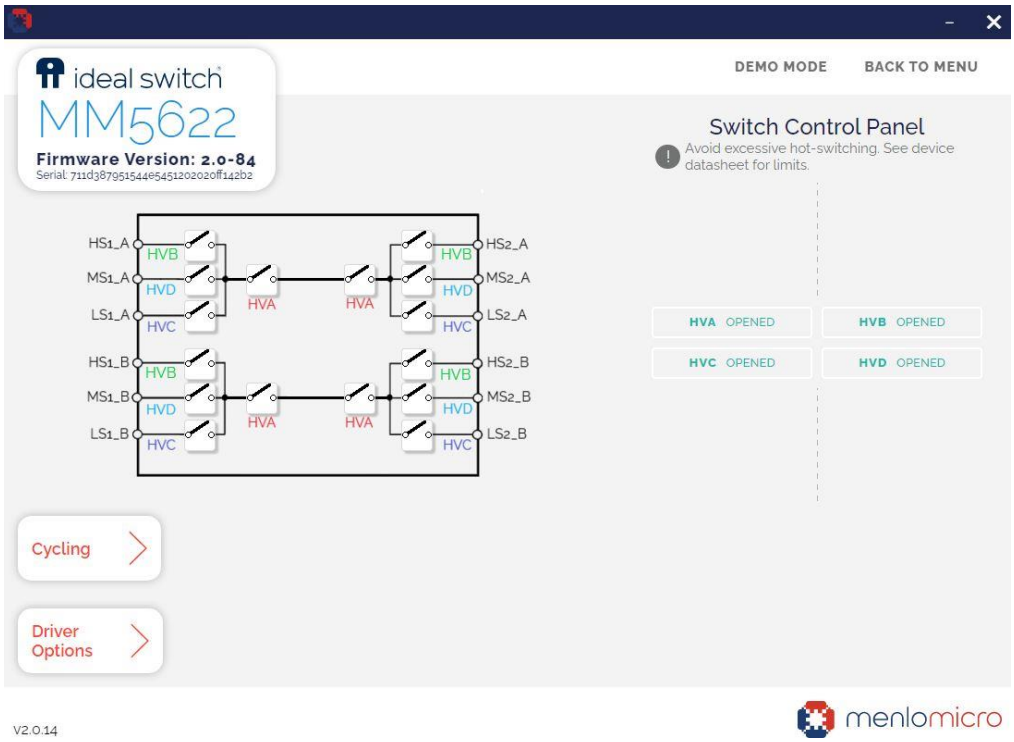
4. With the USB cable connected, start the Menlo Micro EVK Control Software which will scan the connected USB ports to find the Evaluation Board. Click on the “5620” or “MM5622” button to confirm the correct board.



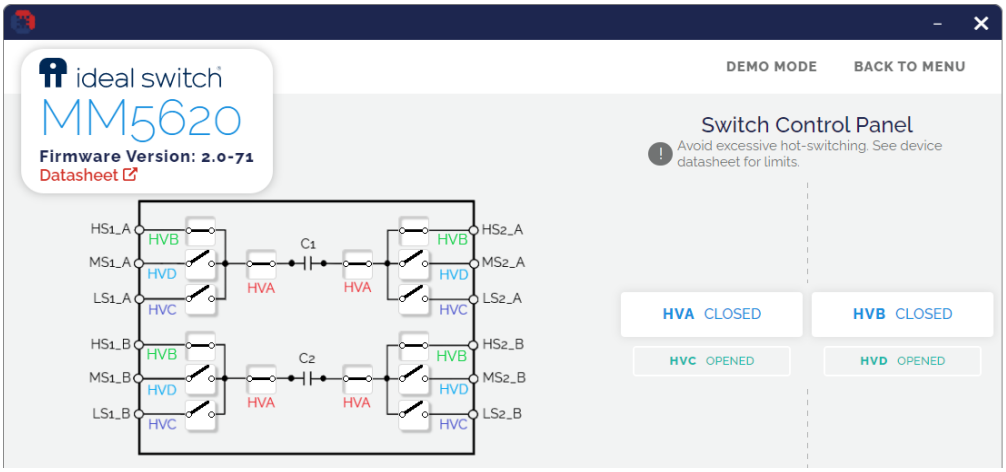


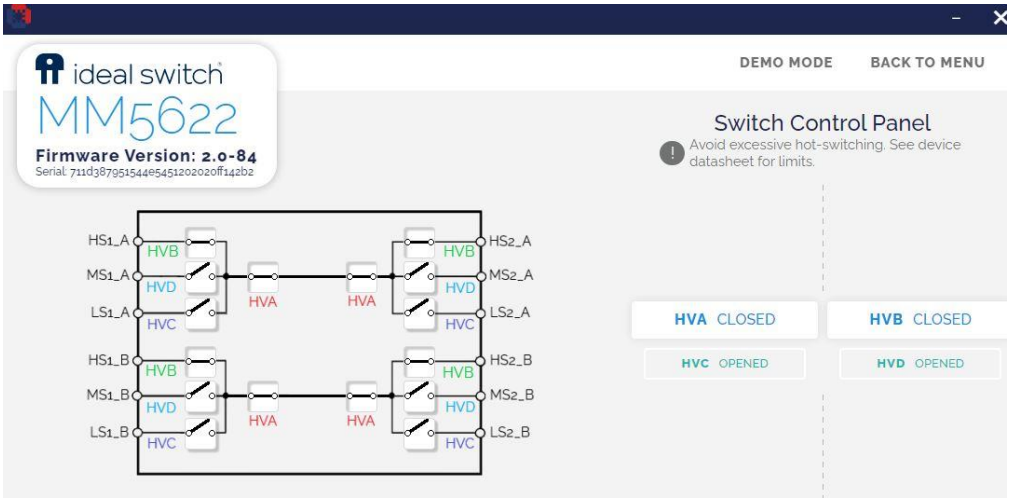
5. The control GUI for the MM5620/MM5622 will be shown and you can now control the switches on the EVK.



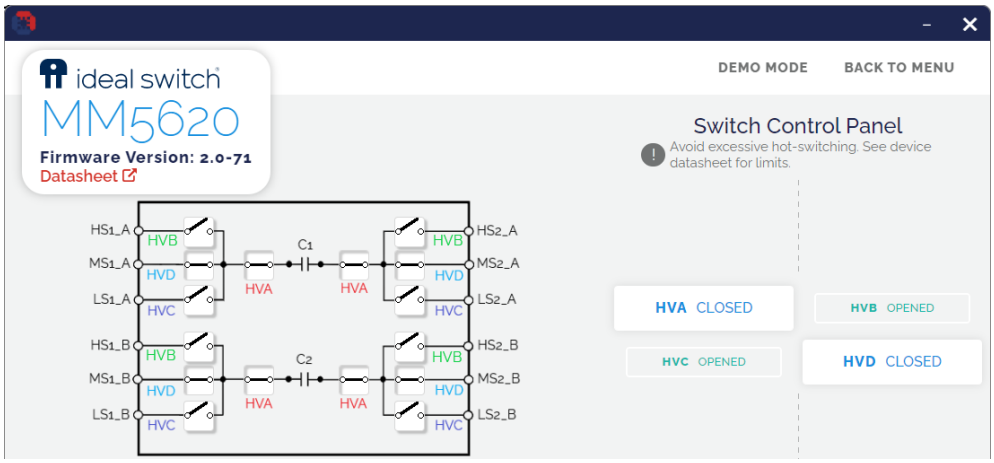


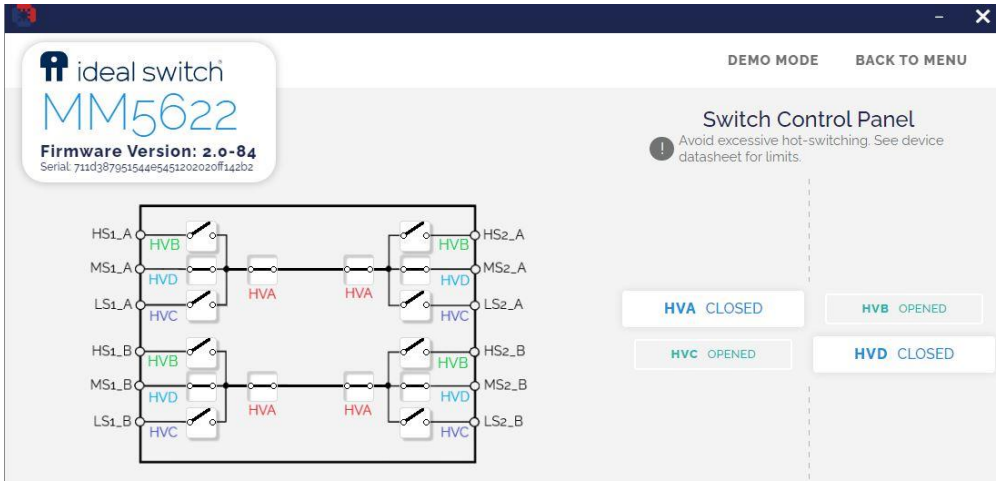
6. To connect the HS1_A/HS1_B port to the HS2_A/HS2_B port, click on the “HVA” and “HVB” switches.



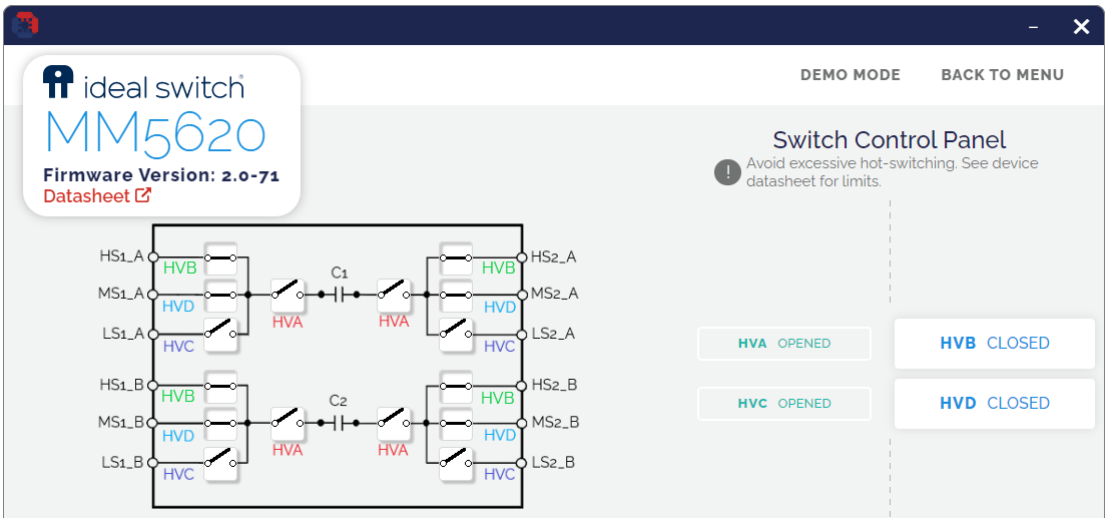


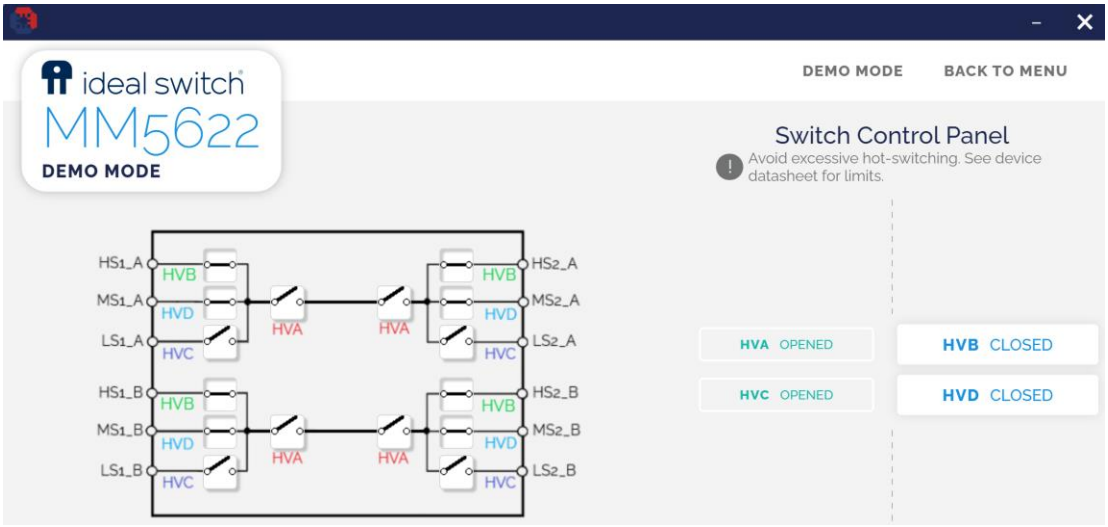
7. To connect the MS1_A/MS1_B port to the MS2_A/MS2_B port, click on the “HVA” and “HVD” switches.





8. To connect the HS1_A/HS1_B port to the MS1_A/MS1_B port and connect the HS2_A/HS2_B port to the MS2_A/MS2_B port, click on the “HVB” and “HVD” switches.





Schematic - Menlo Control Board: