

STANDARD OPERATING PROCEDURE FOR MEASUREMENT SYSTEM

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1-a- Instruments

The setup contains three fundamental instruments:

A sourcemeter

A laptop

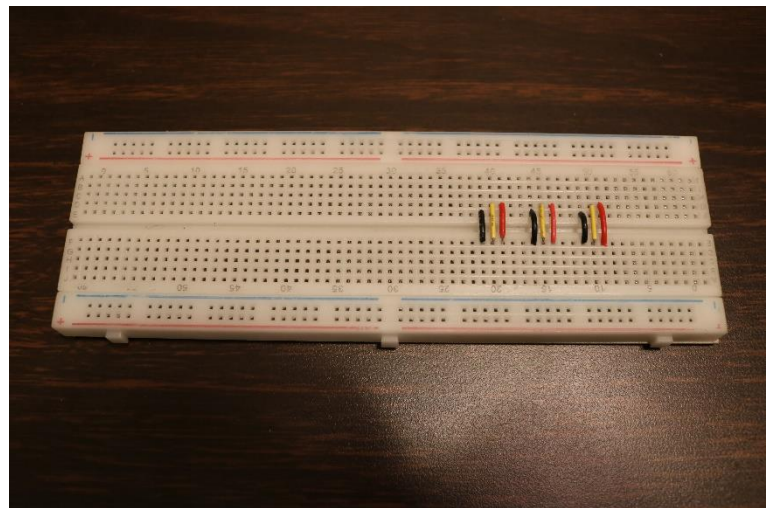
A switching matrix.



All three must be connected through USB using a data cable and a USB extender.



Additionally, the switching matrix must be connected to a breakout board, which is in turn connected to the DUTs using a breadboard.



1-b- Step-by-step connection instructions:

This setup is designed to work with 3 devices, namely, a diode, and two transistors.

Before starting any connection, make sure to identify a definite location/surface to set the setup. This is important as the jumper wires can be unwantedly disconnected from the breadboard if moved often.

1- Connect the USB type-B end of the white USB cable to the back of the sourcemeter.



2- connect the black USB cable to the back of the switching matrix
(!!!Important!!! Be gentle when plugging and unplugging this cable from the switching matrix, and make sure to fasten the screw. This will avoid risks of detaching the mini-USB port from its circuit board.)



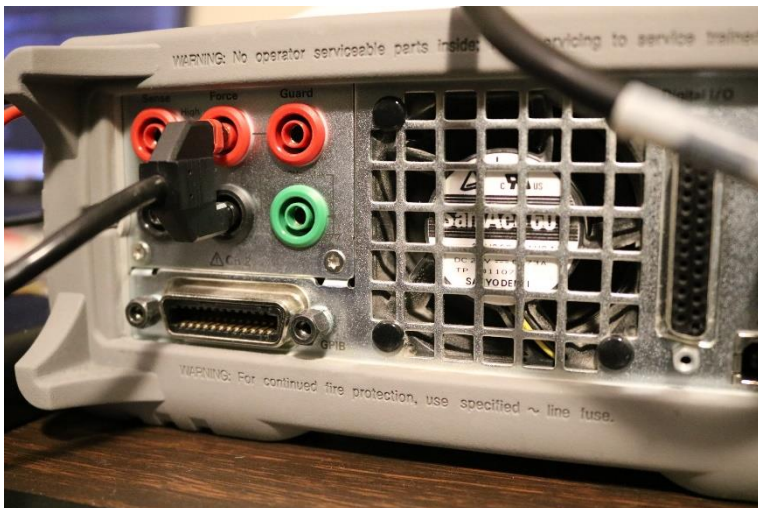
3 - Connect the USB type-A end of both cables to the remote unit of the USB extender.



4 - Connect the remote unit to the local unit using the white data cable.

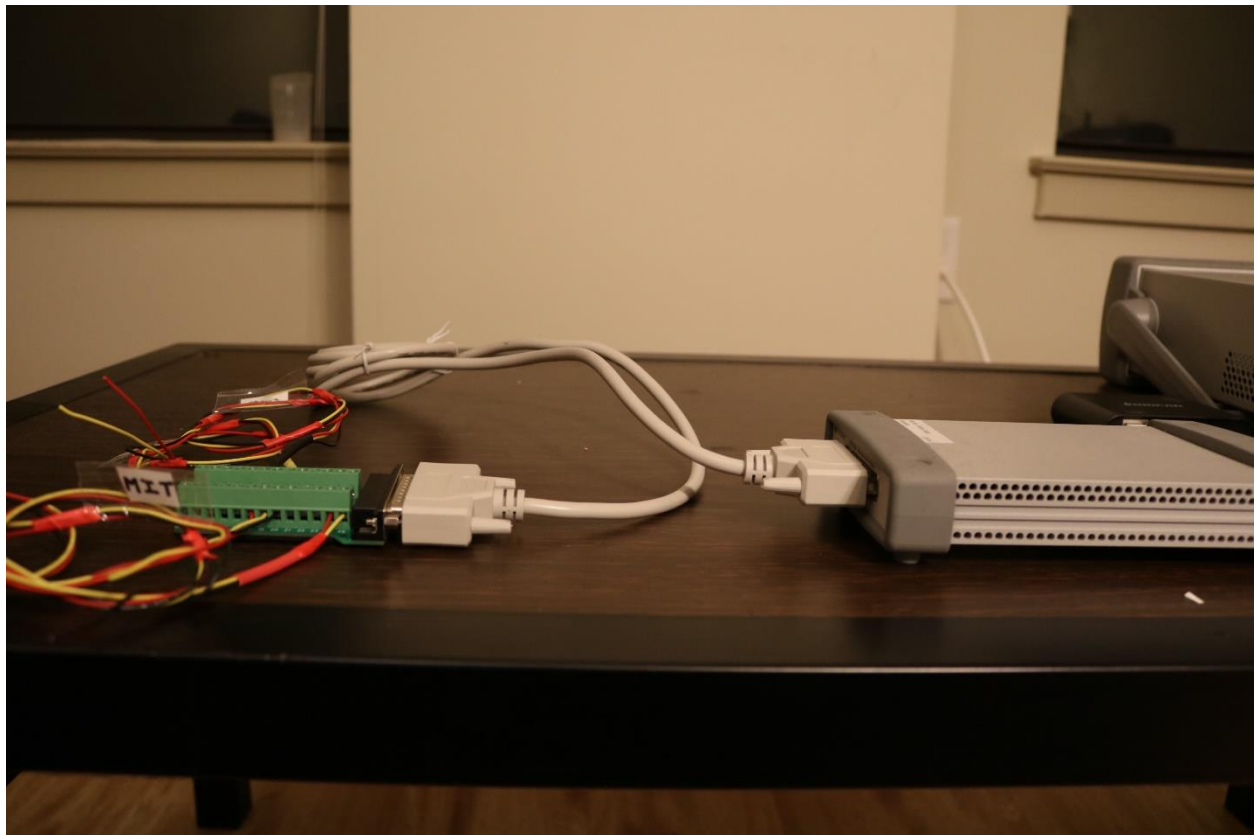


6 - Connect the two “banana plug”-to-alligator cables to the force inputs of the sourcemeter. The “banana plug”-to-alligator cables are color coded with some red tape on their “high” pin.



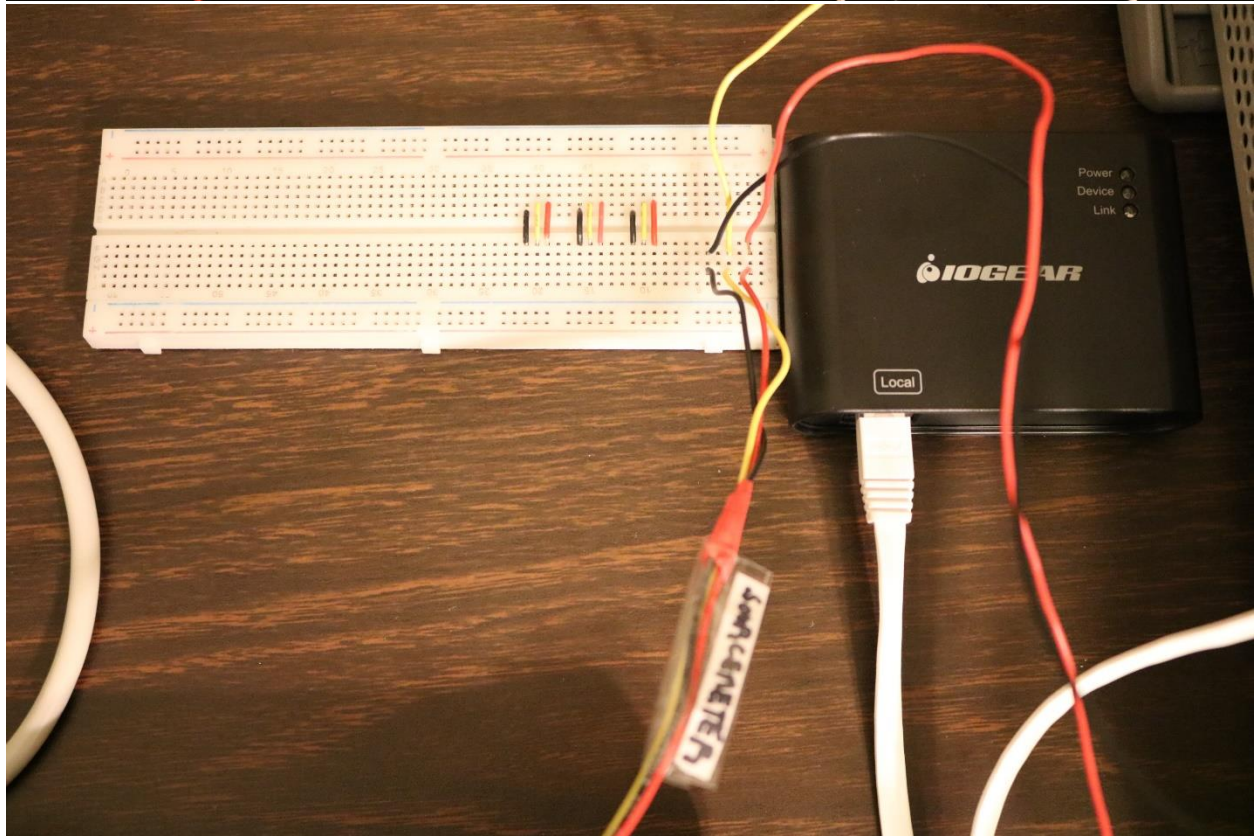
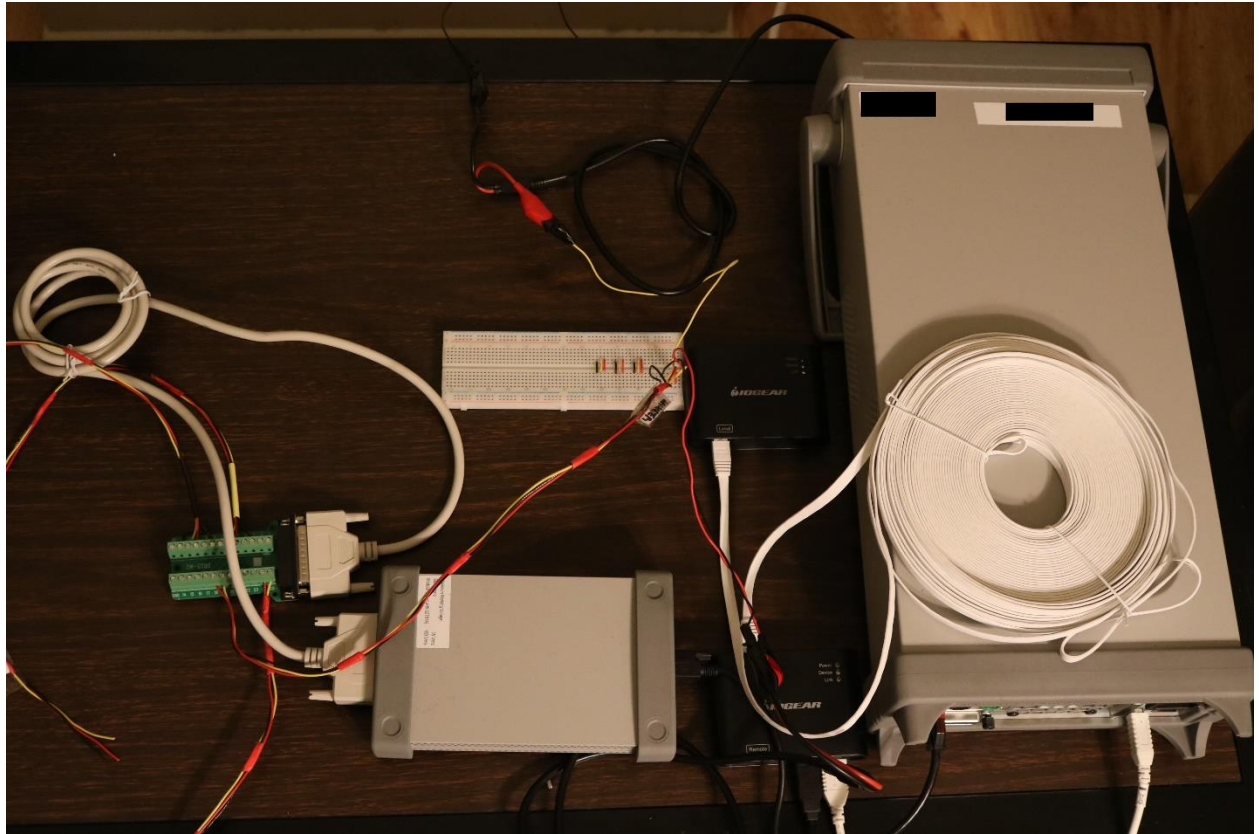
7 - Connect the female end of the grey GPIB cable to the switching matrix, and the male end to the breakout board and make sure to fasten the screws.

Note that the breakout board has preconnected and labeled wires Red represents gate bias, yellow represents drain bias, and black represents source/ground. The breadboard also contains preconnected jumper wires following the same color coding.

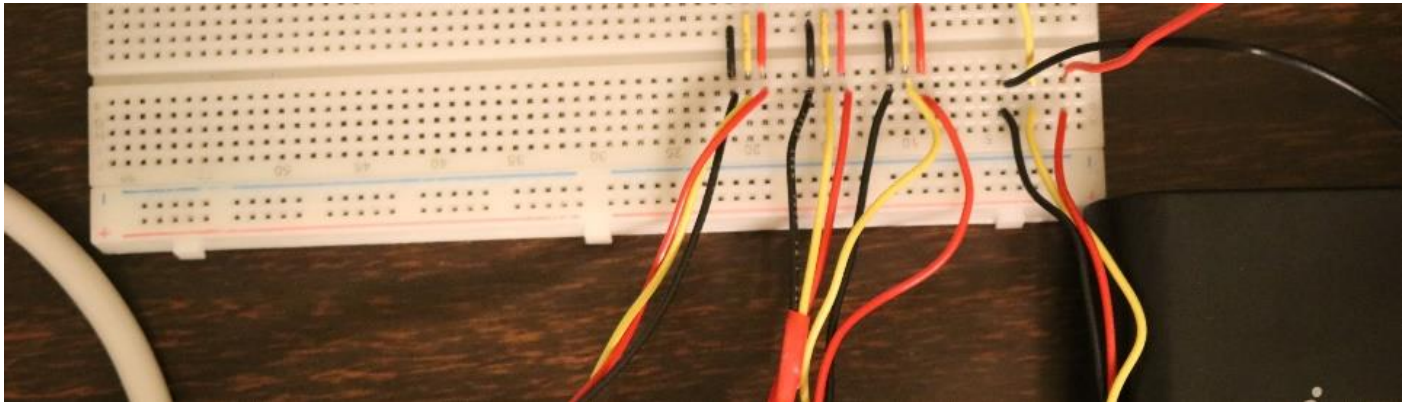


8 - Connect the wires from the sourcemeter to the breadboard as follows:

Match the colors from the alligator clips to the colors on the wire set labeled “sourcemeter”, in other words, connect them in series. The front “high” output of the sourcemeter will serve as drain bias, while the rear “high” output will serve as the gate bias. Either of the ground from the sourcemeter would work as they are common.



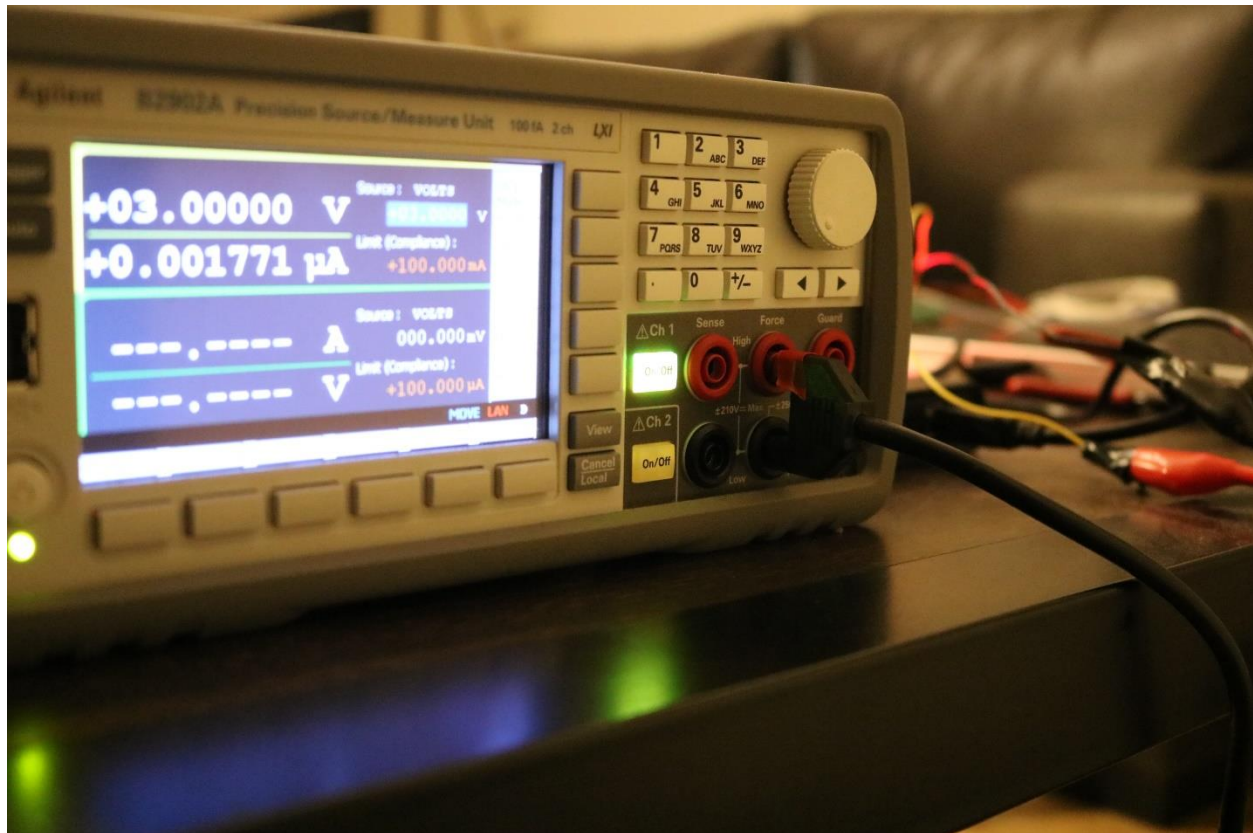
9 - Match all wires from the breakout board to the breadboard from right to left (Right being the side to which the jumper wires are closest). The rightmost set of wires connect DEVICE_1, the middle connects DEVICE_1, and the left most connects a diode. You can omit the red wire (gate wire) for the diode, as it is a two-terminal device.



10 - Connect all devices to the breadboard following the naming convention. (Picture below contains test devices)

11 – Plug the switching matrix, the laptop, the USB extender, and the sourcemeter to a power outlet and turn on the laptop and the sourcemeter.





12 – Login to the laptop (Password is “openup”) and connect the local unit of the USB extender to the laptop.

