

Standard Operating Procedure – SAN Four Point Probe System



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OPERATING INSTRUCTIONS:

A) Loading the sample-

- 1) Place the sample on the mounting chuck.
- 2) Slowly lower / raise the probe head, depending upon the thickness of the sample, by rotating the Z adjustment knob. Make sure that there is some clearance (gap) between the probes and the sample to be tested.
- 3) Rotate the contact lever clockwise till the probes contact the sample. Make sure that the probe tips are perpendicular to the test sample. Generally, there will be no need to touch the mounting block lock screw. Only in case if the probe tips are not perpendicular to the sample, release the lock and adjust the probe head.
- 4) When the probes make contact, continue lowering until the tips have compressed between 50 and 70% of their travel only. You can use the Z adjustment knob to finely adjust the amount of compression.
- 5) **Care must be taken to ensure that the probe tips are not compressed more than 70%.**

B) Making electrical connections-

- 1) Check if the leads coming out of the probe assembly are connected to the Keithley SMU.
- 2) Turn the Keithley SMU ON. Allow some time for the instrument to warm up for accurate results.
- 3) Press "CONFIG", select "SOURCE V", select "SENSE MODE" and finally select "4-WIRE" and press "ENTER".
- 4) Press "SOURCE I" and "MEASURE V" on the meter.
- 5) Set the compliance limit for the voltage (default is 21V) by pressing blue "EDIT" button two times. Press the "Range" button upward or downward to increase or decrease the desired range. Press the buttons corresponding to the number. You can change the place value by using the "EDIT" arrows. Press "ENTER" once the desired value is seen on the meter.
- 6) To enter the value of current – press blue "EDIT" button. Again press "Range" button upward or downward to increase or decrease the desired range. Press the buttons corresponding to the number. You can change the place value by using the "EDIT" arrows. Press "ENTER" once the desired value is seen on the meter.
- 7) Once the desired value of current is seen on the meter with proper compliance for voltage, press the "ON/OFF" button. The current will now be sourced and the voltage will be displayed.