

# System 4x

## DISCRETE SEMICONDUCTOR PRODUCTION LINE TEST SYSTEM

- Transistors
- IGBT
- SCR
- Optocouplers
- MOSFETs
- JFet
- Diodes

The 4x is the next generation test system for discrete semiconductors.

Designed for high volume production wafer and finished component testing in mind, the system is also an economical answer for your incoming and general-purpose testing as well.

The 4x is PC Windows based and connected via Ethernet to an embedded processor for uninterrupted test operations.

The system provides a programmable voltage stimulus to 3000VDC and current to 200A and most devices can be tested in 300µs or less, in high volume production applications.

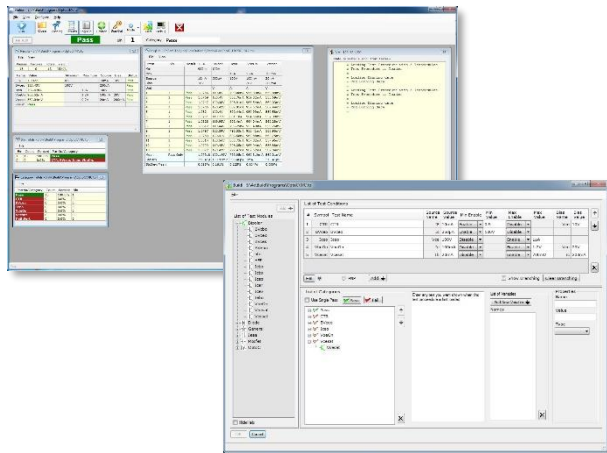


HIGH POWER / HIGH SPEED

### System Configuration

The 4x is self-contained, except for the PC, and is approximately 19 inches wide by 12 inches deep and 6 inches high. Front panel coax interface connections are provided to connect to your prober, handler or device interface adapter.

Test operations are controlled from the 4x Dashboard at the PC, however a remote terminal controller is available for manual operation. A plug and play interface is provide for automated operations. Simply identify the signal paths and the 4x can communicate with virtually any automated prober or handler.



The 4x Build Editor is used to create and edit a test procedure to verify the electrical parameters of your devices. In Build, a list of test symbols is displayed by device type and are easily added to a test procedure to build a list. Each parameter is edited for the specified test condition.

### Theory of Operation

The 4x is personal computer based using Microsoft Windows 10 Professional for all user-interface functions. An embedded processor controls all system and instrument functions.

There are two Source Measure Units (SMU) to stimulate or measure the Device Under Test (DUT). Both SMUs include a voltage and current source originating from the raw power supply and individual meters to make measurements.

The 4x SMUs are robust in design and can withstand long ON times. The 4x automatically detects when the source stimulus (voltage or current) is reached to sense the desired characteristic to measure and perform the test.

Each SMU source has its own Digital to Analog Converter (DAC) for controlling the amount of current and voltage specified for the DUT. Using proprietary circuitry, voltage and current can be held tightly to the programmed value. A high-speed switch matrix is used to switch in or out the SMUs to the DUT. See System Overview for complete specifications.

Source/Measurement Summary

	Ranges	
	In SMU	Out SMU
<b>Voltage</b>	5V, 50V	5mV, 50mV, 500mV, 5V, 50V, 300V*, 3000V*
<b>Current</b>	200pA, 2nA, 20nA, 200nA, 2uA, 20uA, 200uA, 2mA, 20mA, 200mA, 2A, 20A	2nA, 20nA, 200nA, 2uA, 20uA, 200uA, 2mA, 20mA, 200mA, 2A**, 20A**, 200A**
±(0.5% of the range + 0.5% of the value)		

\*200mA max. \*\*50V max.



870 N Dorothy Drive, Suite 714 | Richardson, Texas 75081  
(972) 783-8100 | email: info@semitek.com

**semitek.com**

*Our support goes beyond the installation, put us to the test!*