

# 201.net

## DISCRETE SEMICONDUCTOR TEST SYSTEM

### Uses:

- Parametric Testing
  - Commercial
  - Military
  - Aerospace
- Production Testing
- Batch Sorting (Binning)
- Screening
- Quality Assurance Testing

### Features:

- Voltage Tests to 2000VDC
- Current Tests to 200A
- 0.5% Basic Measurement Accuracy
- Programmable Test Voltage and Current
- Four-terminal Kelvin Connections
- Text and Graphical Display of Data Reports
- Easy Programming and User-friendly System Control
- Handler Interface for Automated Applications
- Multiple Test Terminal Configuration
- Internal Calibration Verify
- Custom test design

For more detailed specifications, visit

**[www.semitek.com](http://www.semitek.com)**

Call 1-888-SEMITEK  
or (972) 783-8100

Fax: (972) 783-8293

e-mail: [info@semitek.com](mailto:info@semitek.com)



**The SemiTek 201.net performs more tests on more devices than any other tester in its class.**

## Introduction

The 201.net is fully programmable to electrically test and ensure the integrity of discrete semiconductor devices. The system is modular in design with each stimulus module individually addressable for specific test requirements.

The system is PC powered and can connect to your local area network for control, program management, and data processing. Multiple systems can be networked to complete production applications.

The .net architecture makes the 201 and XTOS operating system the most versatile, simplistic, and economical, discrete semiconductor test system available in its class.

In its sixth generation, the 201.net is ideal for inspection and production applications where precision measurements are required.

## System Overview

### Test capabilities:

- Leakage Current
- Breakdown Voltages
- Conducting Current
- Optical Intensity
- Component Gains
- Thermal Resistance
- On/Off Testing
- Surge
- Avalanche/Inductive Load Voltages
- Holding Test for Thyristors
- Gate Triggering Parameters

**Operation:** The 201.net XTOS is compatible with Microsoft Windows 7 Professional®. Engineers program and operators control the 201.net from the XTOS Main Window. Engineers use the XTOS Build Editor to generate and maintain test files specifying every action of the tester. Test results are stored in comma delimited text files for analysis and by virtually any external programs including Microsoft's Excel® and Word®.



### Specifications

The Input and Output Source Modules provide the stimulus to the device under test. Under program control, the following stimulus may be applied:

#### Input Range

- Voltage 4V and 40V, Resolution: 2mV
- Current 200nA to 20A, Resolution: 0.1nA

#### Output Range

- Voltage 2V to 200V, Resolution 1mV
- Current 200uA to 20A, Resolution 0.1uA

#### Power Module

- The Power Module Option extends the source stimuli to 2000V and 200A.

The Measurement Module measures the electrical characteristics of the device under test as a result of the applied stimulus.

#### Measurement Range

- Voltage 2V to 2000V, Resolution: 0.1mV
- Current 200nA to 20A, Resolution: 10pA

#### Accuracy

- Stimulus 0.25% to 0.50%
- AC 1% to 2%

### Configuration

The 201.net is configured in a bench-top enclosure. For production needs, the system is easily integrated with any automated device handler or wafer prober. For manual test applications, SemiTek offers a wide selection of test adapters for a variety of device package types.

The system's integrated relay matrix provides connection from the stimulus modules to the device under test in any combination.

Additional test terminals may be added for multi-independent operation. Using XTOS multiple systems controlling multiple terminals may be connected using a local area network.

### Options

The 201.net provides flexibility in testing with the addition of plug-and-play options. These options include:

- Low Current to 20pA
- I-Hold
- Thermal Resistance
- Three Phase Diode
- Capacitance/Inductance
- $t_{on}$ ,  $t_{off}$ ,  $t_r$ ,  $t_f$
- Inductive Load
- Optical Coupler
- Timing
- Emitter/Sense
- Avalanche
- Surge

Other options include:

- Categorization of Test Results.
- Integration of user-specified test instrumentation.
- Curve Tracer Mode (Add-on)

## XTOS Operating System

### Programming

Engineers use the Build Editor within XTOS to generate and maintain test file data instructions.

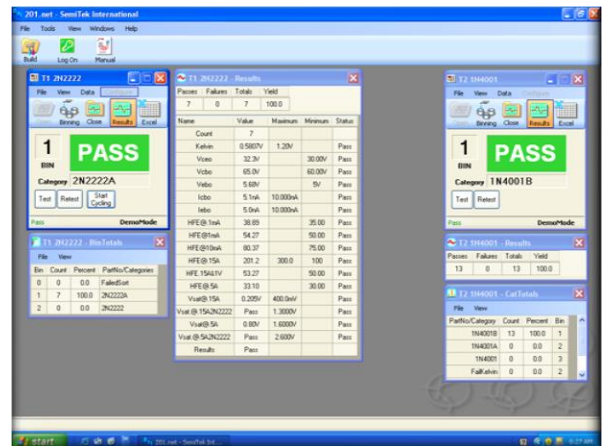
These instructions can also be maintained using Microsoft's Excel® if so desired.

To program, you select the desired preformatted modules and specify the stimulus and acceptance criteria required. Online help is provided for each module to complete the required test instruction.

There are general modules to specify a variety of system commands such as Pause, Wait, Message, and Time/Date. Specific test modules define source input current and voltage, matrix configuration, and acceptance limits. Custom modules may be written to perform special or unique tests as necessary.

The Categories module is a defined list of modules to sort devices based upon passing or not passing specific modules.

### Operation



The XTOS software is user-friendly and provides easy-to-follow instructions for operating the tester.

The XTOS Main Window provides access to test files, output data reports, and views of the active systems and test terminals.

Test results can be exported to Microsoft Excel® in various formats. Each function is password programmable and a complete diagnostic and calibration procedure is included.



870 N Dorothy Drive, Suite 714  
Richardson, Texas USA 75081  
(972) 783-8100 Fax (972) 783-8293  
e-mail: info@semitek.com

[www.semitek.com](http://www.semitek.com)