The industry's most popular bench-top parametric analyzer now combines stress-measure testing with device characterization capabilities.

Newly enhanced Model 4200-SCS system
The best choice for device characterization and materials research is now even better.

Get device characterization and stress-measure testing in one system

Since the Model 4200-SCS was introduced, its exceptional ease of use, ultra-sensitive measurement capabilities, and expandable platform have made it the leading choice for semiconductor device characterization. With the release of KTE Interactive version 5.0 system software, the Model 4200-SCS now offers everything needed to set up and execute a variety of stress-measure tests, too. The new software comes standard on all new Model 4200-SCS systems or is available as an upgrade for existing installations. KTE Interactive 5.0 is backward-compatible with earlier versions and will run all existing projects and tests.

Characterize device lifetimes accurately and economically

Smaller device geometries and manufacturing trends like thinner gates and tighter tolerances have reduced device lifetimes dramatically—devices that once had wearout times of 100 years can now be anticipated to wear out much sooner, approaching the expected lifetime of the systems into which they are built. As a result, the margin of error in device lifetimes that system designers could once count on no longer exists. Reliability must be built in and tested during the design process, not simply monitored in volume production, as in the past. That's why a growing number of manufacturers are moving to the Model 4200-SCS to evaluate reliability performance earlier in the design and manufacturing process.

Step up to higher device characterization performance

The Model 4200-SCS is recognized as the industry's best bench-top parametric analyzer—now, its device characterization capabilities have been improved with enhanced project and test management tools, improved software and operating system performance, updated control hardware, and more powerful data management. New instrument drivers and improved custom coding capabilities give it greater flexibility for device characterization applications.

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A GREATER MEASURE OF CONFIDENCE

KTE Interactive 5.0 makes the best device characterization solution even better:

- Improved project management features simplify organizing and sequencing tests.
- The "Subsite Data Sheet" organizes data from multiple tests neatly to allow advanced testing like Van der Pauw resistivity and Hall Effect tests.
- User-programmable "exit on compliance" conditions make it easy to abort tests and sequences quickly and automatically when a compliance condition is detected.
- The "Repeat Test Execution" button simplifies performing repetitive operations.
- The Windows XP Professional operating system allows faster bootups/shutdowns and supports USB communications.
- The 2GHz Pentium 4 controller, twice as much system RAM as earlier versions, and a new 10/100Base-T Ethernet interface dramatically improve system performance.
- A faster GPIB interface speeds communications with external instruments.

KTE Interactive 5.0 offers a variety of useful stress-measure testing advantages:

- Enhanced looping functions simplify creating stress-measure tests.
- Stress conditions and sequencing patterns can be set up with a simple point-and-click interface.
- Allows collecting data easily from a series of tests for tracking parameters and degradation trends over time.
- Real-time data graphing simplifies monitoring the progress of lengthy tests.
- User-programmable compliance exit conditions can trigger end-of-test on device failure or when the targeted parameter degradation is reached.
- The software's "toolkit" architecture allows inserting any test into the measurement phase for maximum flexibility.

Examples of various standard WLR tests are included:

- Hot Carrier Injection (HCI) or Channel Hot Carrier (CHC)
- Negative Bias Temperature Instability (NBTI)
- Charge to breakdown (Q_{BD})
- Electromigration (EM)

The basic Model 4200-SCS instrumentation architecture offers a variety of advantages for reliability testing:

- High measurement accuracy and sensitivity.
- Rapid detection of process and parameter variations.
- The ability to stress up to 20 devices in parallel.
- Highly flexible configuration—up to eight fully independent SMUs, depending on instrument configuration.
- Sequencer function allows full control of measurement tests.

COST-EFFECTIVE SOFTWARE AND SYSTEM UPGRADES

KTE Interactive 5.0 is available as both a software upgrade and as part of a system upgrade package designed to allow installed 4200-SCS systems to run more efficiently and manipulate data more easily. In addition to the KTE Interactive 5.0 software, the system upgrade includes a new Windows® XP-based embedded controller and operating system.

ORDERING INFORMATION

Model	Description
4200-SCS	KTEI 5.0 is included with all new Model 4200-SCS systems
4200-KTEI-5.0	Software upgrade for currently installed Model 4200-SCS systems
4200-CPU-2G/F	Hardware upgrade for currently installed 4200-SCS/F (Flat Panel Display version)
4200-CPU-2G/C	Hardware upgrade for currently installed 4200-SCS/C (Composite Front Bezel version, designed to be used with an external CRT)

For more information on how KTE Interactive 5.0 can help you gain better, more cost-effective control of your semiconductor device characterization and stress-measure test applications, contact your nearest Keithley sales office or visit www.keithley.com.