

Advance your device testing with the most advanced pulse and measure capabilities



III-V testing • Flash memory characterization • Charge trap testing Isothermal testing • Arbitrary waveform generation

Our latest upgrades let the Model 4200-SCS Semiconductor Characterization System deliver even more of everything you need for material and device modeling, characterization, and analysis of emerging device technologies, all in one compact, high productivity tool. KTEI (Keithley Test Environment Interactive) Version 6.2 enhances the system's pulsed I-V measurement capabilities, supporting new pulse sourcing and measurement hardware and software options.

Find an option that matches your applications exactly

KTEI 6.2 supports optional hardware/software packages designed for specific sets of test applications (Table 1):

- **4200-PIV-A Pulse I-V Package.** A new dual-channel pulse generator is combined with an integrated digital oscilloscope, specialized interconnect, and software that controls pulse generation and data acquisition to automate a variety of pulsed I-V tests. Patented cable compensation and load-line compensation functions are provided.
- **4200-PIV-Q Pulsed I-V Q Point, Dual-Channel Pulsing Package.** Combining multiple pulse generators and a digital oscilloscope offers a variety of new capabilities, including dual-channel pulsing (i.e., on both a device's gate and drain), higher power pulsing, and pulsing from a non-zero quiescent point.
- **4200-FLASH Non-Volatile Memory Test Package.** This package tests single flash memory cells or small arrays quickly and easily, providing four independent (but synchronized) multi-level pulse channels.

Table 1

	4200-PIV-A	4200-PIV-Q	4200-FLASH
Device	FET	HEMT, FET	Floating gate FET
Technology	Advanced CMOS	III-V/LDMOS	NAND, NOR, non-volatile memory
Source Method	Pulse gate, DC bias on drain	Dual pulse for gate and drain with quiescent point testing	Pulse gate, drain, source and substrate
Measure Method	Pulse I-V and DC	Pulse I-V and DC	DC only
Measurements	Gate voltage, drain voltage and current	Gate voltage and current, drain voltage and current	Gate voltage and current, drain voltage and current
Pulse Width Range¹	40ns to 150ns	500ns to 999ms	250ns to 1s
Unique Capability	8-bit, 1 gigasample/s measure rate, good for advanced CMOS Pulse I-V testing and high speed single-pulse charge trapping	Dual-channel, quiescent point pulsing for scaled-down RF transistors	One multi-level pulse channel per DUT pin, integrated High Endurance Output Relay supports endurance testing of NAND and NOR

¹Full Width Half Maximum (FWHM)

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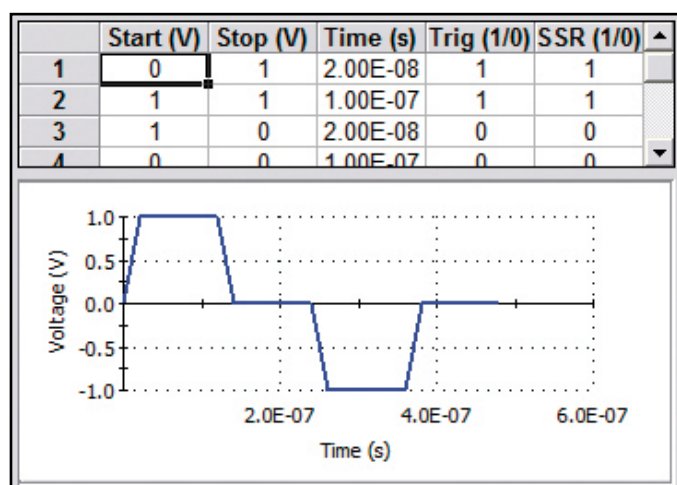
Generate faster, higher pulses easily

The new Model 4205-PG2 Dual-Channel Pulse Generator provides pulse periods as short as 20ns in high speed mode or up to $\pm 20V$ (into 50Ω) in high voltage mode. Each system can support four pulse generators, for up to eight pulse generation channels. A new trigger-in capability simplifies synchronizing multiple channels of pulse.



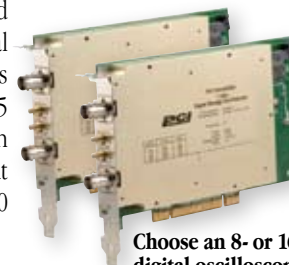
Create arbitrary waveforms quickly and precisely

The 4205-PG2 supports two new waveform generation modes in addition to the pulse mode. The Arbitrary Waveform Mode can generate complex waveforms made up of up to 256K data points at clock speeds up to 25MHz. The Segment ARB™ Mode (patent pending) simplifies creating, storing, and generating complex waveforms made up of up to 1024 user-defined line segments.



Get the resolution level your application demands

KTEI 6.2 supports two integrated digital oscilloscopes with general-purpose scope capabilities and time-domain measurements to complement the pulser's time-domain sourcing. They can be programmed for automated measurement and data acquisition or used with the standalone GUI for traditional scope tasks. The Model 4200-SCP2 offers 8-bit resolution with a sample rate up to 2.5 gigasamples/second; the high resolution Model 4200-SCP2HR provides 16-bit resolution and a sample rate up to 400 megasamples/second.



Choose an 8- or 16-bit digital oscilloscope.

Upgrade to the state of the art

Like all Model 4200-SCS software upgrades, KTEI 6.2 is fully compatible with all previous versions—there's no need to rewrite old tests or projects. A system running the new software will open any test or project created using any previous version of KTEI. The new hardware options can be built into new systems or installed in existing ones as factory upgrades.

Discover what KTEI 6.2 can do for your pulse testing applications

Your Keithley sales representative can guide you in finding the best approach to configuring new Model 4200-SCS systems or upgrading your existing ones to the latest technology. To learn more about how the Model 4200-SCS and KTEI 6.2 can simplify your most challenging applications, contact your sales representative to arrange a personal demonstration of the system or visit www.keithley.com.

The Segment ARB™ wave generator produces waveforms made up of multiple line segments from 20 nanoseconds to one second in length. Each segment can have a different duration, for exceptional waveform generation flexibility.

Specifications are subject to change without notice.

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KEITHLEY INSTRUMENTS, INC. ■ 28775 AURORA ROAD ■ CLEVELAND, OHIO 44139-1891 ■ 440-248-0400 ■ Fax: 440-248-6168 ■ 1-888-KEITHLEY ■ www.keithley.com

BELGIUM

Sint-Pieters-Leeuw
Ph: 02-363 00 40
Fax: 02-363 00 64
www.keithley.nl

CHINA

Beijing
Ph: 8610-82255010
Fax: 8610-82255018
www.keithley.com.cn

FINLAND

Espoo
Ph: 09-88171661
Fax: 09-88171662
www.keithley.com

FRANCE

Saint-Aubin
Ph: 01-64 53 20 20
Fax: 01-60-11-77-26
www.keithley.fr

GERMANY

Germering
Ph: 089-84 93 07-40
Fax: 089-84 93 07-34
www.keithley.de

INDIA

Bangalore
Ph: 080-26771071-73
Fax: 080-26771076
www.keithley.com

ITALY

Milano
Ph: 02-553842.1
Fax: 02-55384228
www.keithley.it

JAPAN

Tokyo
Ph: 81-3-5733-7555
Fax: 81-3-5733-7556
www.keithley.jp

KOREA

Seoul
Ph: 82-2-574-7778
Fax: 82-2-574-7838
www.keithley.co.kr

MALAYSIA

Kuala Lumpur
Ph: 60-3-4041-0899
Fax: 60-3-4042-0899
www.keithley.com

NETHERLANDS

Gorinchem
Ph: 0183-63 53 33
Fax: 0183-63 08 21
www.keithley.nl

SINGAPORE

Singapore
Ph: 65-6747-9077
Fax: 65-6747-2991
www.keithley.com.sg

SWEDEN

Solna
Ph: 08-50 90 46 00
Fax: 08-655 26 10
www.keithley.com

SWITZERLAND

Zürich
Ph: 044-821 94 44
Fax: 41-44-820 30 81
www.keithley.ch

TAIWAN

Hsinchu
Ph: 886-3-572-9077
Fax: 886-3-572-9031
www.keithley.com.tw

UNITED KINGDOM

Theale
Ph: 0118-929 75 00
Fax: 0118-929 75 19
www.keithley.co.uk