



PX9002A Parallel Parametric Test System

Industry-leading throughput across diverse semiconductor processes

Highest Throughput and Lowest Cost of Ownership

The Keysight PX9000 Series is a new per-pin parallel parametric test system platform that improves upon the flexibility, expandability, and per-pin output range (up to 100 V) based on the proven P9000 Series Parametric Test System to provide a higher WPH (Wafers per Hour), smaller effective footprint, and shorter TAT (Turnaround Time). Now in addition to advanced logic devices, the PX9000 Series covers a across diverse semiconductor manufacturing including high voltage logic, memory, analog and other specialty process technologies

Keysight PX9002A: Parametric Test System Total Solution

The Keysight PX9002A Parallel Parametric Test System has a unique per-pin parametric test unit with a range of parametric test capabilities such as IV measurement, capacitance measurement, frequency measurement and pulsed measurement. It significantly improves throughput with its powerful per-pin test capabilities and strong parallelization function.

The number of channels is expandable up to 50 channels, and measurement capabilities are upgradeable as needed for cost effectiveness and asset protection for future test needs.

Hardware, software, and professional services

PX9002A parallel parametric test system may be considered as a hardware integrated system with system cabinet and test head, however, there are more essential system elements of software and professional service by Keysight technical experts.

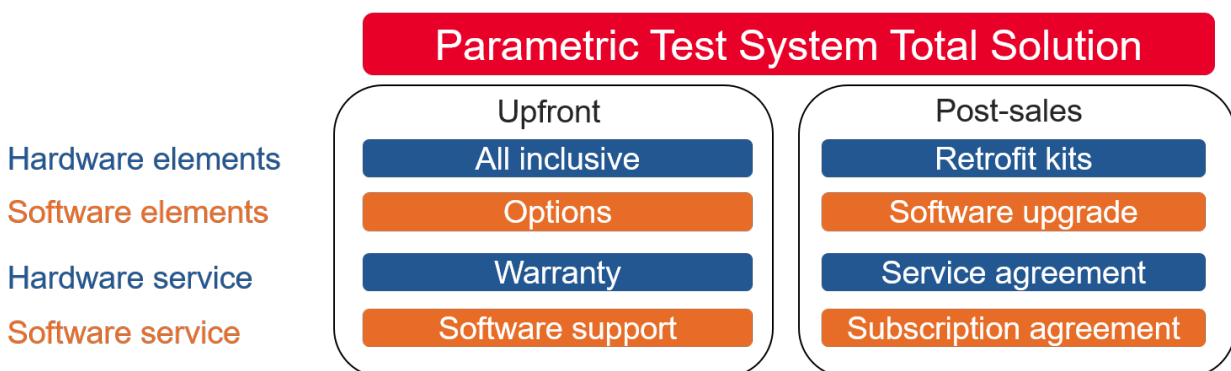


Figure 1. Parametric system total solution

PX9002A as single offer of total solution

Keysight also offers solution support and training as professional services to provide a quicker start up, maximize your productivity and minimize downtime of systems. Keysight experts have deep domain knowledge of test equipment, software, standards, and regulations. Service and solutions from Keysight provide truly trusted systems that you can rely on the measurements you make, through the proactively structure an on-site service plan that can include an on-site repair service, a remote response team, a scheduled calibration services, or timely software updates.

- Upfront purchase: configuring available hardware and software options along with some professional Application Engineer (AE) consulting and Customer Engineer (CE) uptime service such as installation, repair, and calibration.
 - Hardware warranty and service agreements are essential for first 12 months and available to extend to 36 months.
 - Software subscription service is offered for first 36 months as required.
- Post-sales: upgrading hardware and software with available retrofit kits and professional AE or CE services. Renewals of service agreement are available with both hardware services and software subscription.

Hardware elements

PX9002A has the test head with per-pin test resource of up to 50ss output channels and system cabinet to use with the probers in semiconductor wafer production line. Most of hardware elements are configurable per your test needs and test structure design to maximize the production capacity and for the highest throughput to archive.

These are the available hardware functions with PX9002A Parallel Parametric Test System.

Selection	Upfront	Post-sales
Per-pin test resources	Required: Source Monitor Unit (PSMU) Optional: Capacitance Measurement Unit (PCMU) Frequency Measurement Unit (PFMU) Pulse Generation Unit (PPGU) High resolution option, Rapid Vth, Universal Kelvin, Extended Path	Retrofittable for adding more channels
Shared test resources	Required: Source Monitor Unit (SSMU) to choose from Medium Power SMU and High Power SMU Optional: Digital multimeter LCR meter High Voltage Semiconductor Pulse Generator Unit (HV-SPGU) Spectrum analyzer	Retrofittable
Test head accessories (optional)	Temperature extension, 4080 probe card adapter	Retrofittable
System controller (required)	Industrial PC (Linux)	Retrofittable



Software Elements

PX9002A has the dedicated system controller with Linux operating system (Red Hat Enterprise Linux). This controller has the PX9002A system software with fundamental capabilities to operate and control the PX9002A test system. The controller can be installed with the optional but essential software effective in managing the semiconductor wafer production and factory automation with PX9002A Parallel Parametric Test System.

Keysight SPECS Parallel Test Extension

Keysight PX9002A uses Keysight SPECS (Semiconductor Process Evaluation Core Software) and the SPECS Parallel Test Extension software to perform parallel test with synchronous or asynchronous parallel mode. The PX9002A system software and SPECS parallel test extension support powerful and intuitive way of developing parallel test applications. Parallel test sequence and flow control allow you to define parallel test flexibly. Parallel test algorithm interface allows you to define scalable test algorithms.

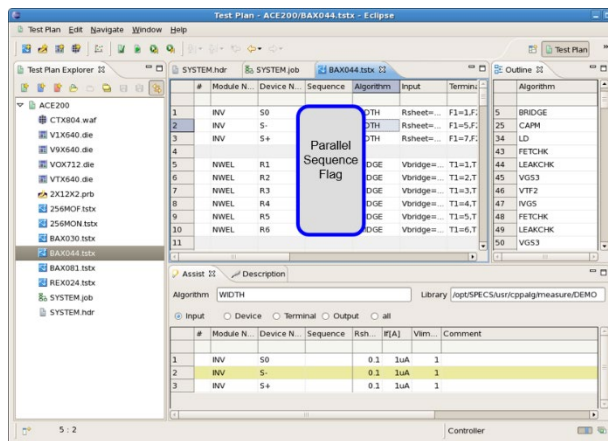


Figure 2. PX9002A SPECS edit menu sample

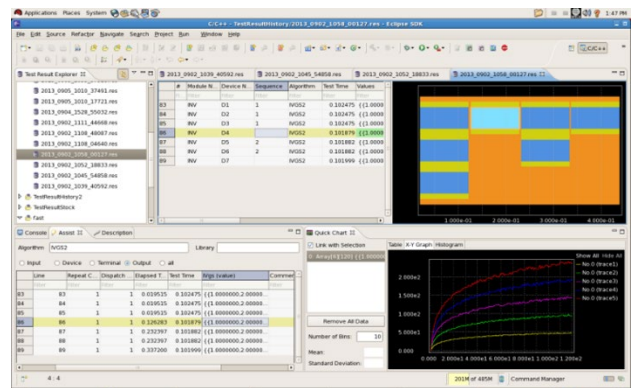


Figure 3. PX9002A SPECS debug menu sample

Advanced optional software functions

PX9002A has optional software functions as advanced software functions to enhance the test environment with PX9002A Parallel Parametric Test System.

- Interactive Debug Panel (IDP)
- Package for standard parallel parametric test
- Package for array test structure
- Package for multi-die test

Keysight SPECS-FA (Factory Automation)

It's the factory automation version of Keysight SPECS test shell.

Offline debug environment of SPECS & SPECS-FA

For test plan development and debug purpose, offline SPECS and SPECS-FA environment (running without live connection to PX9002A test system) is available for optional purchase.

Software media on CD-ROM

Optional software media on CD-ROM are available for PX9002A system software, SPECS, SPECS Parallel Test Extension, and SPECS-FA.

Software with subscription service

PX9002A software packages and its software packages offer 36 months subscription service for each new tester at purchase.

To maintain the software with the latest enhancements and defect fixes, Keysight recommends renewing the software update subscription with PX9002A system software, SPECS, Parallel Test Extension, and SPECS-FA. You can access to the latest software within the subscription service as well as the remote technical support calls to local Keysight AE experts.

Keysight Professional Services

Keysight offers numbers of services to complete the parametric tester solution including;

On-site installation services

This is a standard service for every new parametric test system at purchase. Keysight Customer Engineer (CE) will install the system at on-site. Before installing the system, Keysight CE also performs site verification as pre-installation process.

Warranty and extended services

12 months of on-site repair service is offered as a standard warranty. Extended warranty service agreements are also available for sale.

Calibration services

12 months of on-site calibration service agreement is offered with the parametric test system. Extended calibration service agreements are also available for sale.

Productivity assistance

Customers can choose the term of productivity assistance from a day to required terms Keysight professional Application Engineer (AE) consulting services.

Application software support

Keysight AE consulting is also available for specific deliverables such as software customization, software program conversion or software program optimization to assist customers programming for additional test parameters, and/or throughput improvement by optimizing software design.

Startup assistance

To correctly set up the parametric test system and check through all purchased functions to operate as soon as possible, Keysight Customer Engineer (CE) can help your smooth production ramp up with the startup assistance.

Training (on-site, Keysight office, or remote)

Various trainings are provided by each region or country to meet your local needs. Contact to the training coordinator in your region or country to see what trainings are available and get a quote of the right ones in local price.

Post-sales professional service

Keysight offers all above consulting services for post-sales as well. Feel free to contact Keysight representative if you need additional needs for new operator trainings and/or for tester throughput improvements for lowering cost of test.

Post-sales service agreement and contract renewal

When the initial service agreements of hardware and software subscription are expiring, Keysight contract sales team will propose you for renewals based on your current system configuration. Request your renewal quote to secure and maintain the parametric test system up and running with the minimized downtime.

Conclusion

All parametric test users want to improve the throughput and minimize any production downtime for the better cost of test in semiconductor wafer productions. To overcome some typical but difficult process test challenges in your semiconductor wafer production, Keysight offers the total solution on parametric test system not only with hardware and software but with professional AE and CE consulting service for your PX9002A Parallel Parametric Test System.

If you need any technical consulting service on throughput improvement and/or advice on service agreements to reduce the unwanted downtime, contact Keysight as we offer the various professional service as agreement and per-incident consultation to maximize your productivity and production capacity.

Keysight enables innovators to push the boundaries of engineering by quickly solving design, emulation, and test challenges to create the best product experiences. Start your innovation journey at www.keysight.com.



This information is subject to change without notice. © Keysight Technologies, 2024, Published in USA, December 11, 2024, 3124-1865.EN