In-Circuit Test Systems

CATALOG

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i3070 In-Circuit Test Systems: Efficient and Reliable PCB Assembly Testing

The proven technology of the Keysight i3070 in-circuit test (ICT) system enhances test efficiency through software, hardware, and programmability. Intended for diverse printed circuit board assembly (PCBA) sizes, it addresses applications such as the Internet of Things, 5G, automotive, and energy. Its unique design minimizes undesired effects from parasitic capacitance, enhances immunity to cross-talk, and eliminates stray signal coupling, ensuring consistent and repeatable measurements.

The i3070 is a versatile solution available both inline and offline, adept at meeting various needs in the production process. Whether integrated into your assembly line or used in a standalone mode, the i3070 stands ready to deliver advanced in-circuit testing capabilities, ensuring the highest standards of quality and precision.

Table 1. i3070 in-circuit test systems

Model	Key specifications	
E9988GL	Bring industry-leading ICT technologies into your automated manufacturing line, saving resources and optimizing your automated test strategy.	Get a Quote >
E9902G	Execute silicon-nail and boundary-scan testing up to 4x faster for up to 2,592 nodes in a footprint that is 16% smaller.	Get a Quote >
E9903G	Execute digital testing up to 4x faster for up to 5,184 nodes with a test system that is 38% smaller.	Get a Quote >
E9905G	Execute digital testing up to 4x faster for up to 2,592 nodes in a footprint that is 38% smaller.	Get a Quote >
E9986E	Handle large and heavy (up to 15 kg) boards with the four-module in-line ICT system built with Keysight's proprietary short-wire fixturing technology.	Get a Quote >
E9988E	Save resources and optimize your automated test strategy.	Get a Quote >
E9988EL	Easily integrate the E9988EL, built to stringent specifications for SMEMA compatibility, into existing SMT lines.	Get a Quote >

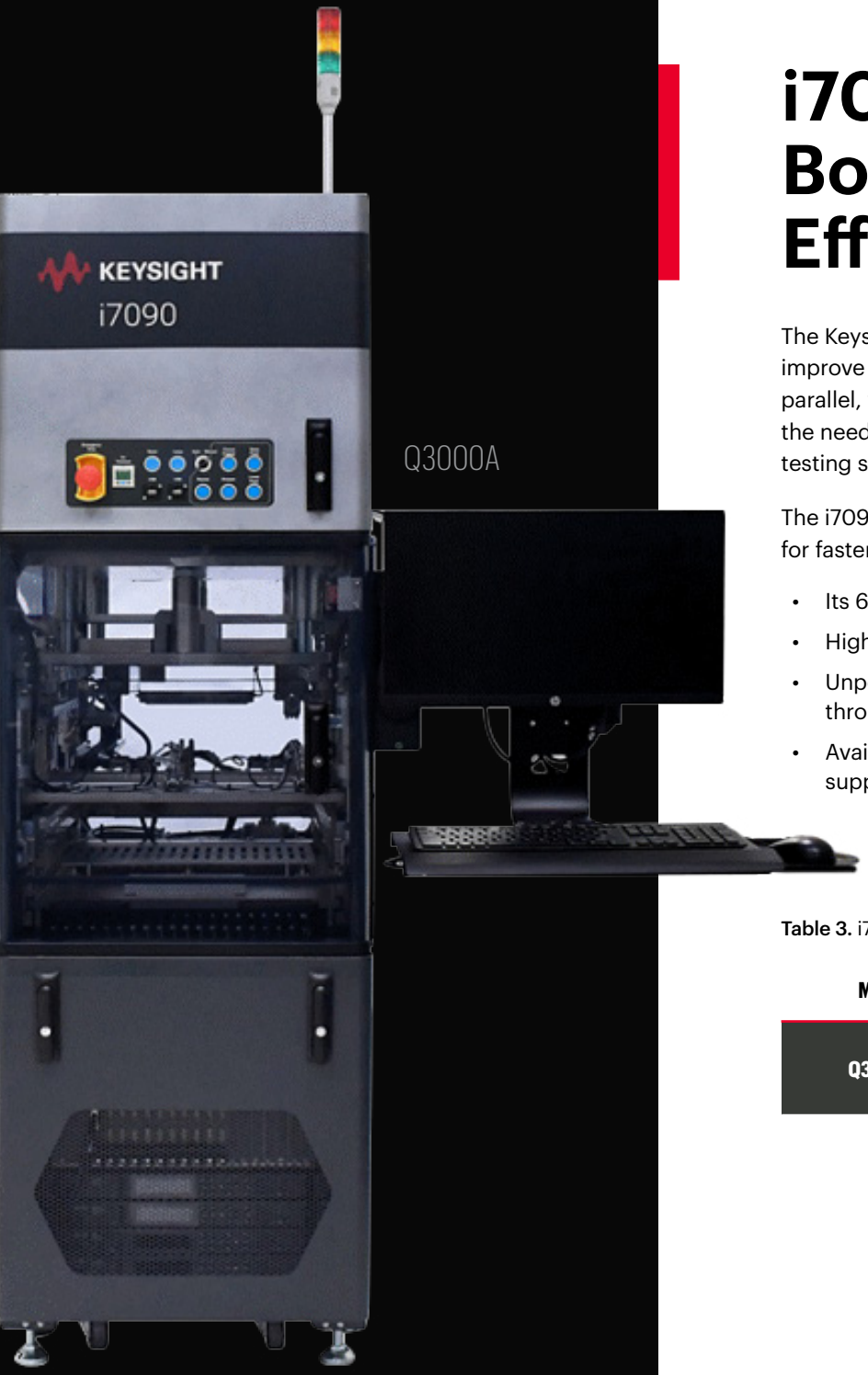
Automated In-Circuit Test Systems: Versatile and Flexible

Keysight offers the most complete in-line automated ICT solutions, including internally and externally integrated in-line handlers in the smallest form factor. Our offerings are versatile and flexible, providing you with a range of advantages:

- Compact footprint: Save valuable production space and enhance overall facility efficiency.
- Stability and robustness: Ensure the best production uptime to minimize disruptions in your manufacturing processes.
- High test speed: Optimize efficiency and achieve faster production cycles without compromising accuracy.
- Seamless integration: Experience compatibility and easy adoption. Our solutions, coupled with best-in-class support availability, ensure smooth and reliable operation.

Table 2. Automated in-circuit test system

Model	Key specifications	
E9988GL	Bring industry-leading ICT technologies into your automated manufacturing line, saving resources and optimizing your automated test strategy.	Get a Quote >
E9988EL	Easily integrate the E9988EL, built to stringent specifications for SMEMA compatibility, into existing SMT lines.	Get a Quote >
E9988E	Save resources and optimize your automated test strategy.	Get a Quote >
E9986E	Handle large and heavy (up to 15 kg) boards with the four-module in-line ICT system built with Keysight's proprietary short-wire fixturing technology.	Get a Quote >
U9405B	Take advantage of multicore processing capabilities with the enhanced Flexicore i1000 ICT system with parallel testing features.	Get a Quote >
U9405A	Accelerate production ramp-up with a small, powerful ICT platform that can switch between in-line and offline configuration.	Get a Quote >



i7090 Massively Parallel Board Test System: Improve Efficiency

The Keysight i7090 is a massively parallel board test system designed to help PCBA test engineers improve manufacturing efficiency while reducing costs. The i7090 supports up to 20 ICT cores in parallel, which means engineers can test multiple units under test (UUTs) simultaneously without the need for multiple systems. This reduces scaling and infrastructure costs and frees up valuable testing space.

The i7090 offers multiplatform support and in-system programming with 160 channels in parallel for faster system throughput. Other features and benefits include the following:

- Its 600 mm width saves space and cycle time.
- High- to ultra-high-volume support facilitates production testing.
- Unpowered and vectorless test extended performance (nanoVTEP) enables faster test throughput, lower cost fixtures, and higher fault coverage.
- Available Keysight OpenTAP software and PCI eXtensions for Instrumentation (PXI) enables support for Keysight and third-party instruments on the same platform.

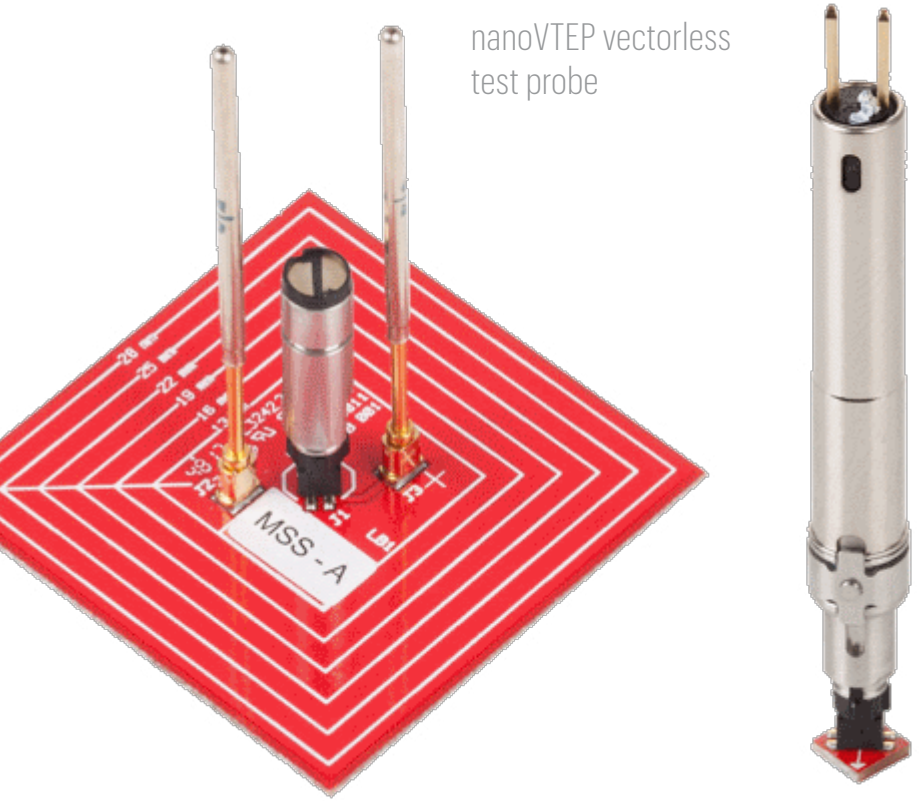
Table 3. i7090 Massively parallel board test system

Model	Key specifications	
Q3000A	Receive support for up to 20 cores to perform tests in parallel on multiple PCBAs.	Get a Quote >

nanoVTEP Vectorless Test Applications: Improve Test Coverage

Keysight devised a way to test the smaller, less powerful signals these devices emit. Keysight nanoVTEP vectorless test solutions offer more robust analysis with a smaller footprint.

Miniaturized amplifiers enable vectorless testing on electronic devices as small as 4 by 4 mm, a 60% reduction in footprint compared with a VTEP probe. The slim profile enables you to implement vectorless testing in high-density fixtures, increasing coverage and fault detection rate.



nanoVTEP vectorless test probe

Table 4. nanoVTEP vectorless test applications

Model	Key specifications	
N4334B	The N4334B nanoVTEP signal conditioner card (MUX card) connects up to 64 probes. It improves the signal quality and reduces the number of test resources required.	Get a Quote >
N4335A	The N4335A nanoVTEP enables greater opportunity for vectorless test implementation on high-density boards when fixture clearance is at a premium.	Get a Quote >
N4336A	The miniaturized nanoVTEP amplifier for vectorless testing works with various sensor plate sizes without requiring additional soldering.	Get a Quote >
N4337A	The smallest sensor plate for the nanoVTEP application is suitable for use in high-density fixtures, 0.16 inches / 4 mm.	Get a Quote >
N4338A	The sensor plate for the nanoVTEP application, 4 x 6.65 mm, is suitable for testing tantalum chip size 3.5 x 2.8 mm / 7.3 x 4.3 mm (C / D).	Get a Quote >
N4339A	The sensor plate for the nanoVTEP application is suitable for testing device geometry up to 0.4 inches / 10 mm.	Get a Quote >
N4340A	The sensor plate for the nanoVTEP application is suitable for testing device geometry up to 1.2 inches / 30.5 mm.	Get a Quote >
N4342A	The sensor plate for the nanoVTEP application is suitable for testing device geometry up to 12 x 152 mm.	Get a Quote >
N4341A	The sensor plate for the nanoVTEP application is suitable for testing device geometry up to 2.5 inches / 63.3 mm.	Get a Quote >
N4344A	nanoVTEP spring clip	Get a Quote >
N4343A	nanoVTEP barrel with spring clip	Get a Quote >
N4345A	Spring probes work in conjunction with sensor plates larger than 10 mm for better contact.	Get a Quote >
N4346A	For a single probe application, the receptacle secures the nanoVTEP amplifier assembly.	Get a Quote >
N4348B	Connect Check uses the intrinsic pin protection diodes of the device under test to verify contact between the device and the PC board. Available for MUX systems only.	Get a Quote >
N4347A	Simplify assembly with a quantity of 50 preassembled barrels, amplifiers, and spring clips.	Get a Quote >
Q4036A	The nanoVTEP mini signal conditioner board has 16 ports to connect to 16 nanoVTEP probes.	Get a Quote >
N4335C	nanoVTEP Gen 2 probe full kit without assembly, N4335C-100	Get a Quote >
N4343C	nanoVTEP Gen 2 barrel with spring clip	Get a Quote >
N4347C	nanoVTEP Gen 2, preassembled barrel, amplifier, and spring clip	Get a Quote >
N4346C	The nanoVTEP Gen 2 receptacle is an enhanced version of the receptacle with a barrel and spring clip that improves assembly.	Get a Quote >

x1149 Boundary Scan Analyzer: Versatile, Easy-to-Use Board Test Tool

The Keysight x1149 enables engineers to perform structural tests, such as open and short tests on their PCBAs. It also performs in-system programming for devices such as field-programmable gate arrays (FPGAs) and complex programmable logic devices (CPLDs).

Additionally, the x1149 programs read-only memory devices and executes memory verification tests on devices such as DDR. program and reprogram these devices in the system, providing greater flexibility and control during development. The x1149 offers advanced testing capabilities and user-friendly software for circuit board testing.

Table 5. x1149 boundary scan analyzer

Model	Key specifications	
N1125A x1149 boundary scan analyzer	Perform electrical structural tests and programming with this tool based on IEEE 1149.x standards for boundary scan / JTAG technology.	Get a Quote >
M6800B	Enable a comprehensive scope of test development features, including configuration, data preparation, test generation, fixture generation, and debugging.	Get a Quote >
M6801B	Enable a comprehensive testing solution that is fully compliant with the latest IEEE 1149.1-2013 standard. This license is for production runtime testing.	Get a Quote >
M6802B	Test the functionality of embedded instruments within a semiconductor device.	Get a Quote >
M6803B	Test the functionality of embedded instruments within a semiconductor device.	Get a Quote >
M6804B	Analyze raw test results to pinpoint the exact device pin location that caused a test failure.	Get a Quote >
M6806B	Get the latest software revisions for the Keysight x1149 boundary scan analyzer.	Get a Quote >
M6808B	Enable the import of external source files to program CPLD / FPGA devices.	Get a Quote >
M6813B	Get the latest software revisions for the Keysight x1149 boundary scan analyzer.	Get a Quote >

x1149 Boundary Scan Analyzer

i1000 In-Circuit Test Systems: Cost-Effective Digital Testing

The digital release of the Keysight Medalist i1000D features per-pin programmable digital cards and a new set of intuitive software graphical user interfaces that simplify programming and development. The i1000D ICT redefines digital testing by bringing electronics manufacturers affordable, easy-to-use testing for digital devices.

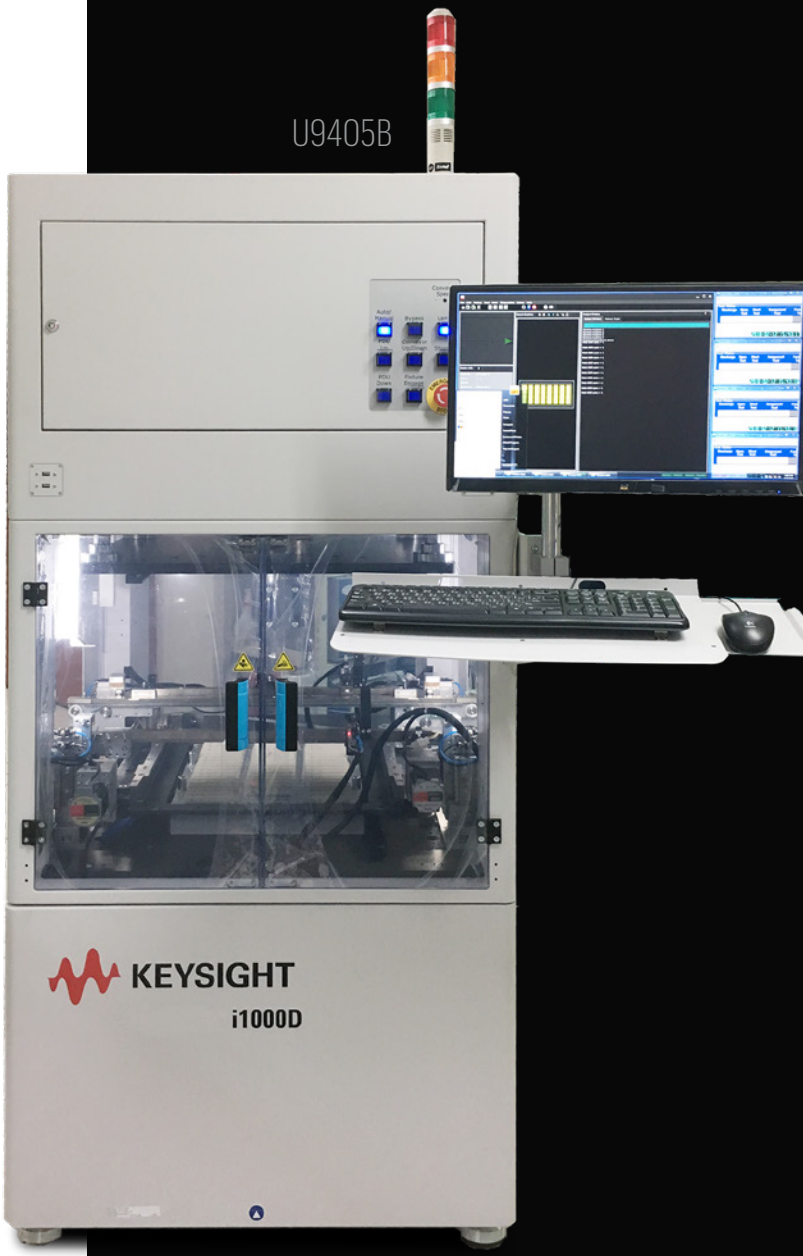
The i1000D supports Cover-Extend Technology (CET) with a nanoVTEP MUX card. If you are already using test fixtures with nanoVTEP MUX cards, you can implement CET without any fixture modification. Simply add new nanoVTEP probes to devices that were previously not testable. This process greatly reduces implementation efforts.

Mixed signal test mode is also available on the i1000D. Execute test strategies like digital to analog and analog to digital and combine the analog and digital test sources into a single file. This process enables you to see both test sources at the same time.

The i1000D provides flexibility in supporting a new pin drive test mode. You can selectively control any digital resource on the tester for disabling or preconditioning pins. In short, the pin drive test mode gives you full control of the available digital drivers on the tester without the need for a digital test library.

Table 6. i1000 in-circuit test systems

Model	Key specifications	
U9405B	The enhanced Flexicore i1000 ICT system with parallel test features takes advantage of multicore processing capabilities.	Get a Quote >
U9405A	U9405A i1000D SFP is the most powerful digital test capabilities. It is the only ICT platform that can switch between in-line and offline configurations.	Get a Quote >
U9401B	The ICT system offers per-pin programmable digital cards to support boundary scan, serial programming, and VCL / PCF library-based digital testing using a low-cost fixturing solution.	Get a Quote >
U9403A	The Keysight U9403Amini ICT provides full ICT features like VTEP, boundary scan, and DUT power control in a 5U form factor. It runs standalone or parallel with internal or external sequencers and provides simple functional test integration with SCPI support.	Get a Quote >



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