Keysight Technologies
Medalist i3070 In-Circuit Test Platform
Introduction

The Keysight Technologies’, Inc. Medalist i3070 is the next generation In-Circuit Test System (ICT) that provides significant return of investment with unparalleled test coverage and robustness. Our solution enables up to 20% more output while boosting coverage by expanding on our award winning vectorless test innovations, extending the performance of the world’s most proven In-Circuit Test Platform.

The Keysight Medalist 3070 is the most flexible and stable In-Circuit Test System in the world. The Keysight Medalist i5000 is the fastest-to-learn, easiest-to-deploy ICT system in the world. Now you can have the best of both worlds with the Keysight Medalist i3070 ICT system. The trusted and robust system that you are familiar with is now also simple-to-use.

The Medalist i3070 combines all the features of a state-of-the-art Keysight Medalist 3070 with the advanced architecture and streamlined usability of the Medalist i5000. You get an intuitive point-and-click interface, automated test debug and optimization tools, and a host of other features to accelerate every aspect of test programming and deployment.
Accelerate success with the Medalist i3070

For electronics manufacturers around the world, the Medalist i3070 is the fastest, easiest way to bring the power of in-circuit test to the production line.

Simple operation, faster deployment.
A menu-driven graphical user interface (GUI) provides easy, menu-driven access to the underlying power of the Medalist i3070. A suite of automation tools further accelerate learning curves, so tests get into production faster.

High throughput, faster payback.
The Medalist i3070 provides a 10 to 50 percent improvement in analog test throughput compared to the legacy Keysight Medalist 3070. And with its new affordable pricing, the Medalist i3070 allows you to trim capital spending while getting a faster return on your test investment.

Flexible architecture, fast configuration.
The Medalist i3070 features one-, two- and four-module configurations, so you can match your test system to your exact production and budget requirements.

Compatible platform, faster migration.
Existing 3070 and i5000 fixtures and programs can be run on the Medalist i3070 with no changes. Your existing investment in test is fully leveraged by the Medalist i3070, so you don’t lose time or money when you make the move.

The Keysight Medalist i3070 ICT system takes the complexity out of in-circuit test with menu-driven programming, helpful automation tools, and a compatible platform architecture for easy migration and industry-leading program transportability.

With its affordable pricing and friendly interface, the Medalist i3070 is as easy to buy as it is to use.
Key Features

Every aspect of the Keysight Medalist i3070 – from its push-button, menu-driven interface to its flexible architecture – is designed to get printed circuit boards and assemblies into production and out the door faster. It’s a powerful asset for helping electronics manufacturers operate profitably in an era of shrinking budgets, scarce resources, and tight schedules.

TUser-friendly GUI

Even someone with limited ICT experience can begin using the Medalist i3070 with little or no training. Programming happens with a mouse rather than a keyboard, so there is no need to type in commands or deal with command syntax or spelling. The Medalist i3070 eliminates the barrier between test system and operator, allowing quality work to be done quickly, and helping engineers reach a high level of productivity with a very short learning curve.

VTEP v2.0

Medalist VTEP v2.0 is a suite of vectorless test solutions which encompasses the new Network Parameter Measurement technology as well as the original Medalist VTEP technology and the award-winning Medalist iVTEP. Bringing all these solutions together into VTEP v2.0 means having the best vectorless test in your hands. An industry first, Network Parameter Measurement technology detects defects on power and ground pins while iVTEP focuses on ultra low value measurement of signal pins (≤ 5fF). Furthermore, having the original Medalist VTEP as its core means enabling measurements which are 4X more sensitive and 5X better in standard deviation. As technology advances with shrinking packages and faster signaling speeds, VTEP v2.0 is a necessity to meet the challenges of today and beyond.

1. Vectorless tests are techniques whereby tests are performed without using logic patterns (vectors) and without needing the board to be powered up ensuring fast and reliable measurements.

AutoDebug

With the Medalist i3070, unpowered passive analog components can be debugged with the click of a button, so even someone with limited ICT experience can perform a complete analog test debug in a matter of hours. AutoDebug fine-tunes tests so boards pass reliably in production. It runs the selected test, captures measurement data, evaluates the data, adds or deletes measurement options, and compiles the tests. You set the rules, and AutoDebug does the rest.

AutoOptimizer

Medalist i3070 tests can be optimized with the click of a button, reducing test time by 10 to 50 percent per test. AutoOptimizer checks to see that tests are stable, and cleans up any conflicts in code to get a clean, smooth-running test. It’s great for cleaning up programs that have been modified during production runs, allowing tests to once again run fast, clean and reliably.
Tester-per-pin Architecture

The Medalist i3070 supports both muxed or unmuxed pin cards. When configured with unmuxed pin cards, the Medalist i3070's innovative system architecture simplifies programming and fixture development with complete per-pin programmability.

Cross-platform Compatibility

The Medalist i3070 is forward and backward compatible with other Keysight ICT systems. Programs developed on the Keysight 3070 (5.30PC and later) or the Medalist i5000 will run on the Medalist i3070 with no changes. Older programs may require a minor re-compile using the Medalist i3070's built-in program conversion tool. Fixtures will work on the Medalist i3070 with no rewiring. This high degree of compatibility with the Medalist i3070 provides an open door to future technologies while preserving the investment you make in test.

Transportable, Repeatable

Stable Tests. Medalist i3070 tests can be written in one location and moved to other sites, lines, or Keysight systems with no impact on test stability or measurement accuracy. With the Medalist i3070 you have a fast, low-cost way to leverage your programming investment and keep programming costs down.

Lower Entry Cost

By leveraging technologies from earlier generations of Keysight ICT systems, the Medalist i3070 carries the best attributes forward while driving costs out of the platform. You get all the power and usability at a lower cost than earlier-generation systems from Keysight.
The Keysight advantage: more first-place finishes

Keysight holds over 200 ICT patents for printed circuit board test and inspection, and is consistently first to market with new breakthroughs that solve real-world problems in test.

Keysight offers ICT solutions for every need, from basic analog test to advanced digital test.

Some of our company’s innovations include:

- 1978 - 6-Wire Measurement
- 1989 - Short-Wire Fixturing
- 1992 - Throughput Multiplier
- 1992 - Panel Test
- 1993 - Testjet
- 1995 - Polarity Check
- 2001 - Automated Silicon Nails
- 2003 - VTEP
- 2005 - iVTEP
- 2006 - Bead Probe Technology
- 2007 - Network Parameter Measurement

Keysight ICT systems include built-in power supplies for powering boards, and sophisticated analog and digital in-circuit programming tools. A steady stream of innovations such as the award winning iVTEP for increased coverage on crowded boards, the new Network Parameter Measurement feature, a world’s first test method for power and ground pins on connectors, short-wire fixturing solutions to improve measurement accuracy and stability, advanced tester-per-pin architecture and more, solves day-to-day test challenges for today’s electronics manufacturers.

![Analog In-Circuit Test Times](chart)
Keysight customers see the results year after year.

Keysight test systems can be found on virtually every manufacturing floor. The trusted and robust systems are the cornerstones of the manufacturer’s success in producing high quality and reliable products.

**Advanced fixturing solutions**

Keysight short-wire fixture technology produces higher signal integrity, more stable tests, easier replication with less debug, and greater accuracy at the DUT interface. Keysight ICT systems support long-wire fixtures; however, short-wire fixtures are synonymous with Keysight ICT systems. The short-wire fixture’s success is so great that you will not see a Keysight ICT system operating without one.

**Advanced test technology**

Keysight’s state-of-the art Intelligent Program Generator (IPG) models each test to determine the optimum test parameters for the maximum reliability and stability of the test. This tremendously reduces the number of tests required to be debugged. Test optimization technologies increases the test’s efficiency so that the robust tests are executed in a shorter time. Throughput multiplier technology increases production line throughput by testing multiple boards in a panel in parallel.

**Greater test effectiveness**

Keysight leads the industry with solutions for vector-based digital test, as well as powered and unpowered analog test. As the inventor of TestJet and the latest VTEP v2.0 test suite, Keysight also drives the pace of development for vectorless test solutions.

**Bead Probe Technology**

With today’s PCBAs getting denser and denser, getting the real estate needed for test access is a challenge. Coupled with the ever-growing prevalence of high signal speed propagation, traditional test pads can severely damage signal integrity.

Keysight **Medalist** Bead Probe Technology is a simple and proven methodology of providing test access while overcoming the challenges above. Not only that, its layout independence property make trace routing an effortless task. Backed with years of study and 16 patents and patent-pending applications, **Medalist** Bead Probe Technology is ready for high volume manufacturing.

With i3070 board-flex management algorithm and probe-select algorithm, you can be assured that i3070 brings out the best that the technology has to offer. For more information, please visit: www.keysight.com/see/beadprobe
Cross-platform Compatibility Guide

While keeping transportability across systems with the same configuration effortless, the Medalist i3070 provides a high degree of compatibility with legacy 3070 and i5000 systems. Compatibility is limited only in some instances when programs are transported across systems that have different pin card configurations.
## Key Specification

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<thead>
<tr>
<th></th>
<th>With UnMux Pin Cards</th>
<th>With Mux Pin Cards</th>
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</thead>
<tbody>
<tr>
<td>Maximum nodes</td>
<td>5184</td>
<td>5184</td>
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<tr>
<td>Maximum channels</td>
<td>5184</td>
<td>1152</td>
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<tr>
<td>Driver/receiver multiplexed ratio</td>
<td>1:1 tester-per-pin</td>
<td>9:2 muxing</td>
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<td>Logic level (per channels)</td>
<td>Per-pin programmable</td>
<td>Per-channel programmable</td>
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<tr>
<td>Logic threshold (per channels)</td>
<td>Single threshold programmable</td>
<td>Dual threshold programmable</td>
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<tr>
<td>Testing speed</td>
<td>6MPs</td>
<td>6MPs, 12MPs, 20MPs</td>
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<tr>
<td>Circuit analysis</td>
<td>Automatic (IPG)</td>
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<tr>
<td>Operating system</td>
<td>Windows XP Professional</td>
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<tr>
<td>DUT power supply</td>
<td>Up to 24 programmable supplies</td>
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<td>Frequency measurement</td>
<td>60 MHz</td>
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<td>Analog testing</td>
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<td>Vector-based programming</td>
<td>VCL and PCF</td>
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<td>Vectorless testing</td>
<td>VTEP v2.0</td>
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<td>High-voltage testing</td>
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<td>Low-voltage testing</td>
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<td>Back-driving current</td>
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<td>Component-level fault coverage reporting</td>
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<td>Boundary Scan testing</td>
<td>Keysight Boundary Scan, ScanWorks</td>
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<td>Flash in-system programming</td>
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<td>CPLD/FPGA in-system programming</td>
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<td>Intelligent yield enhancement test</td>
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<td>NAND tree program generator</td>
<td>Language-based</td>
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<td>Polarity check software</td>
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<td>SPC quality tool</td>
<td>Push-button Q-Stats</td>
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<td>Automated test repair tool</td>
<td>Medalist Repair Tool</td>
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<td>Modular construction for flexibility/scalability</td>
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<td>Dual-Well and Throughput multiplier</td>
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<tr>
<td>Fixture types supported</td>
<td>Short wire, wireless, long wire</td>
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</table>
Keysight offers an innovative and flexible asset management program for manufacturers who need the Keysight Medalist i3070 for the short term. For more information, please visit: www.keysight.com/see/ict_rental

Related Web Resources

For more information on Keysight Medalist 13070 In-Circuit Test Platform, please visit: www.keysight.com/see/ict

For more information on Keysight Technologies’ products, applications or services, please contact your local Keysight office. The complete list is available at: www.keysight.com/find/contactus

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Canada (877) 894 4414
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www.pxisa.org
PCI eXtensions for Instrumentation (PXI) modular instrumentation delivers a rugged, PC-based high-performance measurement and automation system.