

# Keysight Technologies

## Medalist i3070 Series 5i Inline In-Circuit Test System

Data Sheet





## Introduction

The Keysight Technologies, Inc. Medalist i3070 Series 5i Inline In-Circuit Test (ICT) system is designed to bring you all the industry-leading ICT technologies into your fully automated manufacturing line:

- Full suite of award-winning Keysight ICT solutions
- Short-wire fixturing technology ensures transportability, repeatability and stability
- Innovative design ensures easy maintenance and fixture change

Built to stringent specifications for SMEMA compatibility, the Keysight i3070 Series 5i can be easily integrated into your existing SMT lines. Here's how the i3070 Series 5i adds value to your SMT line:

- Compact chassis, saves 33% of floor space over conventional 3070 systems.
- Full automation capabilities reduce labor costs in today's competitive labor market where retention of experienced line operators is becoming a challenge.
- Single point of contact for your ICT solution, versus customized automation requiring liaison with different test and automation vendors.
- Excellent ROIC protection, as the heart of your existing i3070 system, the module cards (e.g., pincards and ASRU N card) can be migrated into the inline system.
- Reduced human contact to minimize contamination and ESD damages to the assemblies.

## Award-winning ICT Solutions

At the core of the i3070 Series 5i is Keysight's powerful new analog stimulus and response unit (ASRU N), which offers unsurpassed test throughput and coverage for today's complex PCBAs.

The i3070 Series 5i comes with the latest software, which means you will benefit from the award-winning technologies within the same system:

**Cover-Extend Technology** – Enables tests for PCBAs which would otherwise be inaccessible using traditional ICT probing methods.

**Throughput Multiplier** – Boosts test throughput with Keysight's patented Throughput Multiplier, which lets you test multiple boards simultaneously. This eliminates redundant test generation and debug, saving you time and money.

**Autodebug** – Slashes debug time from three days to four hours or less!

**AutoOptimizer** – Optimizes test times for repeated tests with a click of a button, reducing the test times by 10 to 50 percent per test.

**Keysight Utility Card** – Allows easy plug-in of third-party test modules for flash programming, boundary scan and LED tests, thus enhancing ROIC of your i3070 system!



## Deployment Options for the i3070 Series 5i

The Series 5i can be deployed in island mode or inline mode, depending on your automation test strategy and cycle time requirements. Refer to Figures 1 and 2 for examples of these two common SMT layouts.

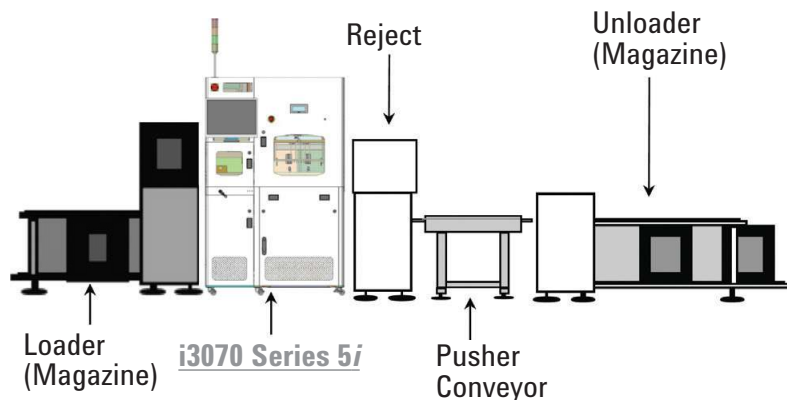
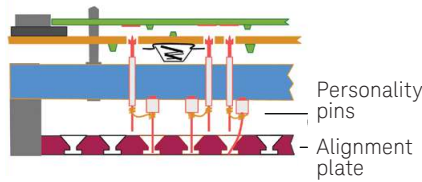


Figure 1. Island mode deployment of the i3070 Series 5i

## Short-Wire Fixturing Technology



Diagrammatic view of a simple express fixture.

Besides enhancing ease of use and maintenance, the i3070 Series 5i retains the popular and proprietary Keysight short-wire fixturing technology used in our stalwart Keysight i3070 systems. Short wire fixturing eliminates problems commonly found with long wire fixturing, such as noise and deterioration of test stability.

This translates into transportable, repeatable and stable tests on your i3070 Series 5i, even if you need to deploy tests halfway across the globe, or on different manufacturing sites.

## Easy Maintenance and Fixture Change



The i3070 Series 5i is designed with ease of use in mind for the busy line operator and test engineer. The card cage is mounted on heavy-duty slides, and can be easily pulled out to facilitate replacement of module cards (refer to image on the left).

An ergonomically designed drawer unit enables fixtures to be easily loaded onto or unloaded from the test system. These features save both time and effort, especially for lines running a higher mix of products.

Furthermore, an array of tools like intelligent fixture identification, board orientation detection and test plan revision controls are available to help you develop best-in-class automation solutions.

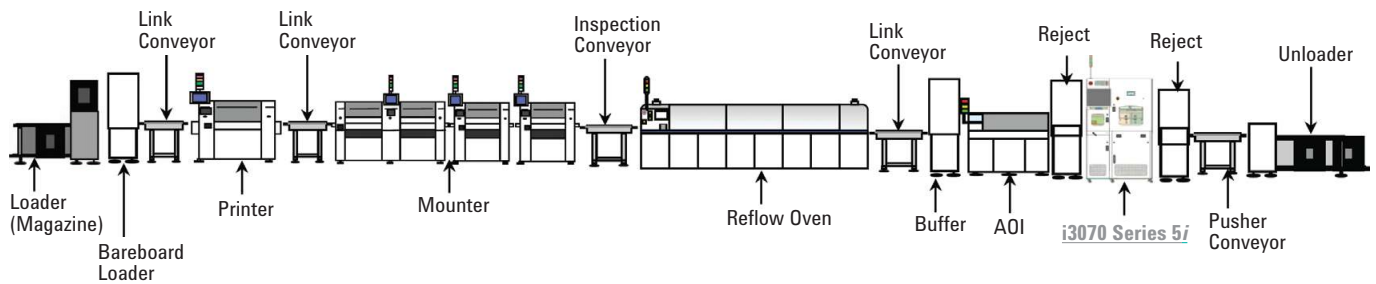


Figure 2. Inline mode deployment of the i3070 Series 5i

Specifications	Units	i3070 Series 5i In-line ICT
Dimensions (excluding beacon and LCD panel)	mm	1206 (L) x 930 (W) x 1860 (H)
	inches	47.5 (L) x 36.6 (W) x 73.2 (H)
Number of test nodes (maximum)		2592
PCB size	mm	Min: 50 (L) x 60 (W), Max: 350 (L) x 350 (W)
	inches	Min: 2 (L) x 2.4 (W), Max: 13.8 (L) x 13.8 (W)
PCB thickness	mm	Min: 0.6, Max: 4
	inches	Min: 0.02, Max: 0.16
PCB weight (maximum)	kg	3
	lb	6.6
PCB edge support (minimum)	mm	3
	inches	0.12
Top-side (adjustable) and bottom side clearance	mm	Top: 90, Bottom: 30
	inches	Top: 3.5, Bottom: 1.2
PCB exchange time	sec	5 – 8
Fixture type		Short wire
Fixture actuation		Press down, dual stage
Transport method and direction		Belt transfer, left to right or right to left
Transport speed	mm/sec	Min: 100, Max: 400
	in/sec	Min: 3.9, Max: 15.7
Transport height	mm	Min: 900 <sup>1</sup> , Max: 1000
	inches	Min: 35.4 <sup>1</sup> , Max: 39.4
Bottom fixture height	mm	Min: 75, Max: 105 <sup>1</sup>
	inches	Min: 2.9, Max: 4.1 <sup>1</sup>
Press force	kN	10
	lbf	2,248
Air pressure	kPa	500 to 700
	psi	72.5 to 101.5
Power		<ul style="list-style-type: none"> <li>- 3-phase, DELTA; supports 200-240 VAC</li> <li>- 3-phase, WYE; supports 208-220 VAC</li> <li>- 3-phase, WYE with neutral; supports 220/380-240/415 VAC (Line-to-neutral / Line-to-line)</li> </ul>

1. Transport height and bottom fixture height are related. If transport height is at a minimum of 900 mm (35.4 in), then maximum fixture height is limited to 90 mm (3.5 in). If bottom fixture height is at maximum of 105 mm (4.1 in), then the minimum transport height is limited to 915 mm (36 in).

## Related Keysight Literature and Online References

Publication title	Pub number
Keysight Medalist i3070 Series 5 In-Circuit Test System – Data Sheet	5990-4344EN
Keysight Utility Card for In-Circuit Test – Data Sheet	5990-4411EN
Keysight Medalist i3070 LED Test – Technical Overview	5990-8680EN
Medalist i3070 In Circuit Test – Utilizing the most comprehensive Limited Access Solution on In Circuit Test – A Case Study	5990-3741EN
Keysight Medalist VTEP v2.0 Powered! With Cover-Extend Technology – Flyer	5989-8429EN
Overcoming Limited Access with Cover-Extend Technology at In-Circuit Test – Case Study	5990-4218EN
IEEE 1149.6 Standard Boundary Scan Testing on Keysight Medalist i3070 In Circuit Systems – White Paper	5990-3232EN

Related literature can be located on Keysight's Medalist i3070 In-Circuit Test Solutions web site at: [www.keysight.com/find/i3070](http://www.keysight.com/find/i3070)



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