

Keysight Technologies

i3070 Series 5i

Inline In-Circuit Test Systems

Data Sheet



Introduction

The Keysight i3070 Series 5i Inline In-Circuit Test (ICT) systems are designed to bring you all the industry-leading ICT technologies into your fully automated manufacturing line.

The latest i3070 Series 5i offers a lean option which is slimmer than ever, reducing floor space needs by 56% compared with the classic i3070 standalone solution. Despite a smaller form factor, this lean model supports bigger board sizes.

The i3070 Series 5i lean option also features a built-in bypass conveyor which can transport printed circuit board assemblies to the adjacent ICT system or other test station. This removes the need for an exterior link conveyor, saving more precious footprint.

Built to stringent specifications for SMEMA compatibility, this solution can be easily integrated into your existing SMT lines. What's more, the new i3070 Series 5i lean option comes with changeable conveyor flow directions, making it easy to be integrated into different SMT lines.

Keysight i3070 Series 5i Inline ICT

- 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
- 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. pin-cards and ASRU N card) can be migrated into the inline system.
- Reduced human contact to minimize contamination and ESD damages to the assemblies.

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.

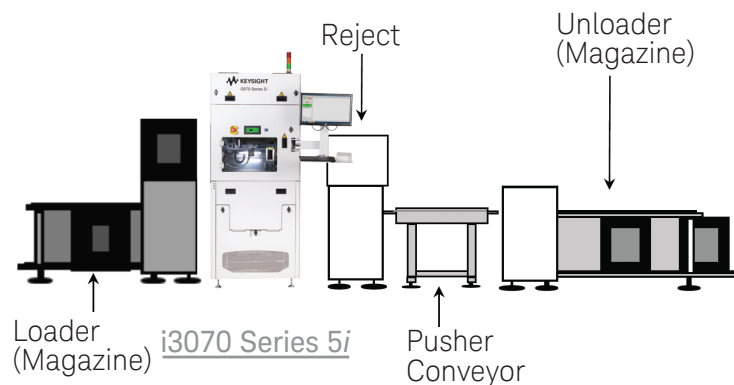


Figure 1. Island mode deployment of the i3070 Series 5i

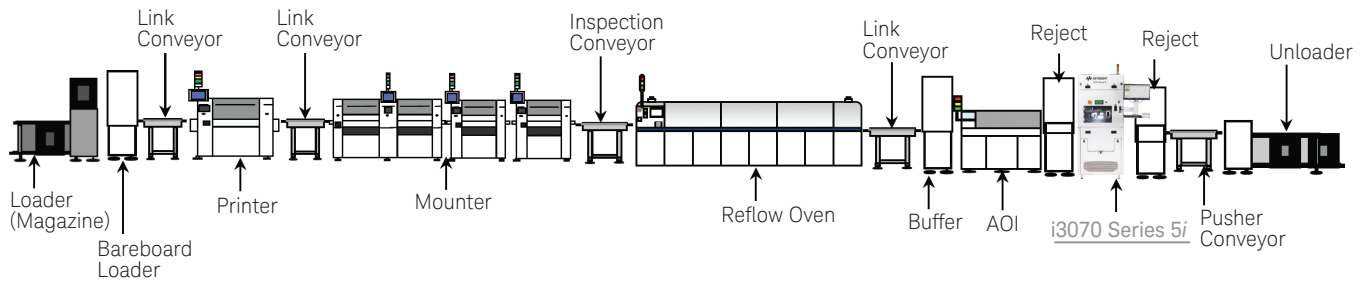


Figure 2. Inline mode deployment of the i3070 Series 5i

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!



Easy maintenance and fixture change

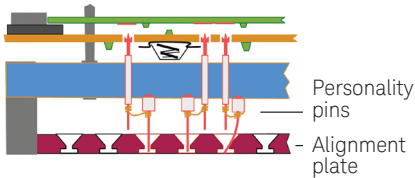


The i3070 Series 5i is designed with ease of use in mind for the busy line operator and test engineer. The card cage is mounted on heavy-duty slides, and can be easily pulled out to facilitate replacement of module cards (refer to image on the left).

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.

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.

Specifications	Units	E9988E	E9988EL (Lean footprint)
Dimensions (excluding beacon and LCD panel)	mm inches	1206 (L) x 930 (W) x 1860 (H) 47.5 (L) x 36.6 (W) x 73.2 (H)	800 (L) x 1400 (W) x 1900 (H) 31.5 (L) x 55.1 (W) x 74.8 (H)
Number of test nodes		2592 maximum	
PCB size	mm inches	Min: 50 (L) x 60 (W), max: 350 (L) x 350 (W) Min: 2 (L) x 2.4 (W), max: 13.8 (L) x 13.8 (W)	Min: 50 (L) x 60 (W), max: 410 (L) x 380 (W) ¹ Min: 2 (L) x 2.4 (W), max: 16.1 (L) x 15.0 (W) ¹
PCB thickness	mm inches	Min: 0.6, max: 4 Min: 0.02, max: 0.16	
Maximum supportable PCB weight	kg lb	3 6.6	
PCB edge support	mm inches	3 0.12	
Top-side (adjustable) & bottom side clearance	mm inches	Top: 90, bottom: 30 Top: 3.5, bottom: 1.2	
Transport method & direction		Belt transfer, left to right or right to left (factory configured)	Belt transfer, left to right or right to left (User-configurable direction)
Transport speed	mm/sec in/sec	Min: 100, max: 400 Min: 3.9, max: 15.7	
Transport height	mm inches	Min: 900 ² , max: 1000 Min: 35.4 ² , max: 39.4	
Bottom fixture height	mm inches	Min: 75, max: 105 ² Min: 2.9, max: 4.1 ²	
PCB exchange time	sec	5 – 8	
Press force	kN lbf	10 2,248	
Air pressure	kPa psi	500 to 700 72.5 to 101.5	
Power		3-phase, DELTA; supports 200-240 VAC 3-phase, WYE; supports 208-220 VAC 3-phase, WYE with neutral; supports 220/380-240/415 VAC (Line-to-neutral/Line-to-line)	

1. Maximum supported board size without secondary conveyor installed. If secondary conveyor is used, the maximum supportable board size is 350 mm (L) x 350 mm (W) or 13.8 in (L) x 13.8 in (W)
2. Transport height and bottom fixture height are related. If transport height is at a minimum of 900 mm or 35.4 in, then maximum fixture height is limited to 90 mm or 3.5 in. If bottom fixture height is at a maximum of 105 mm or 4.1 in, then the minimum transport height is limited to 915 mm or 36 in.

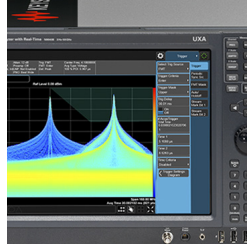
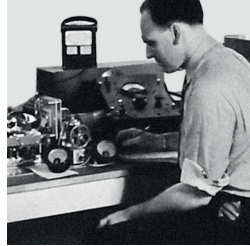
Related Keysight literature and online references

Publication title	Pub number
Keysight Medalist i3070 Series 5 In-Circuit Test System – Data Sheet	5990-4344EN
Keysight In-Circuit Test Suite – Portfolio Brochure	5992-0423EN
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 i3070 In-Circuit Test Solutions web site at: www.keysight.com/find/i3070

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