

Keysight Technologies

i3070 High Node Count Test Solution

Technical Overview



Add to Any Series 5 or Series 3 3070

The Keysight Technologies, Inc. new i3070 in-circuit test (ICT) high node count test solution is the world's highest pin count ICT system. The solution brings a level of performance and portability to the high node count test market that has never before been experienced.

Keysight, the world's largest ICT supplier for 19 consecutive years, has long been regarded as the ICT leader in boundary scan test technologies. Our native 3070 family suite of 1149.1 and 1149.6 boundary scan test tools is the world's most complete and widely used solution for ICT scan chain testing.

And these tools have long served as a means to test high node count printed circuit boards with fewer test pins. But our latest innovation provides 2,500 more pinned shorts testing and nearly 1,000 more active hybrid test pins than the next largest ICT system.

Upgrade ANY Keysight 3070 Series 3 or Series 5 ICT

Today, Keysight's high node count test solution allows any Keysight Series 3 or Series 5 four-module test system to be easily upgraded into an ultra-high pin count test system, to give the test engineer more options for testing high node count boards.

What makes the high node count i3070 especially attractive is:

1. Low cost
2. Mobile and transportable
3. Best-in-class interconnect technology

Low cost

High node count test solutions are typically very expensive.

Keysight has taken a different approach. By doubling the pin capability of a standard 3070, the Keysight i3070 high node count solution re-uses 100% of your existing 3070 investment.

The high node count solution consists of an i3070 high node count adapter that doubles the 3070 pin count and advanced high node count software tools to manage test development, debug and run time operations.

The result is a solution capable of testing boards with 10,400 pinned shorts nets and 8,500 pinned Hybrid nets at a fraction of the cost of buying a new high node test system.

Mobile and transportable

Have you ever wanted to relocate your high node count board testing to a different building or a different country? It can be a daunting task. Sometimes, the decision is to buy another tester.

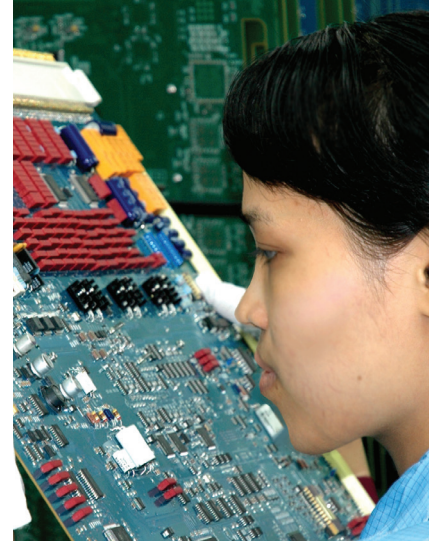
But why buy another tester if you can simply relocate the high node section of the tester to that other location? Chances are high that a Keysight 3070 is already sitting in that other location.

So, we've designed the Keysight high node count adapter to be as simple to relocate as a test fixture. Equipped with a simple handling and alignment system, the adapter is easily removed from any 3070 or i3070 test system and installed onto another. Need to move to another building or country? No problem – just lift the adapter off the tester with a handler, box it and ship it, like you do today with high node count test fixtures.

The World's Highest
Pin Count ICT
System

10,400 Test Pins

Eliminates
Intermittent Tester-
Fixture Connections



Test operators will be instantly familiar with the standard 3070 operator GUI

Best-in-class interconnect technology

Reliable high pin count interconnect between tester and test fixture has been an industry challenge for years. You may be accustomed to repeatedly reseating your high node count test fixtures until you finally get solid connection to the test system.

The Keysight high node count adapter solves this problem with a new, simple interface, designed to be a “One & Done” connection. Imagine not having to reseat your test fixtures any longer.

Impedance Matched Design Provides Excellent Signal Integrity

Performance characteristics

The Keysight high node count adapter ensures exceptional signal integrity. A critical part of the design process was to ensure that the measurement superiority of the 3070 test system was preserved, and that all 3070 Family tests could be executed as if the high node count adapter were invisible.

Analog and digital test integrity have been preserved with the adapter design. Path resistance is approximately ½ ohm, less than that of a typical fixture. And digital driver overshoot and undershoot have been minimized through the use of matched impedances through the adapter.

In fact, the adapter leverages many design attributes of the 3070 Family itself – there’s no wiring inside the adapter; 3070 Family switching relays are used for all signal switching; and matched impedances throughout combine to provide reliable, repeatable, low noise signal paths.

Shorts test

Keysight has many years experience developing ICT algorithms to accurately detect and diagnose PCB shorts.

In fact, Keysight has uniquely invested IP into the detection and isolation of PCB shorts when a board has been divided for test between two test fixtures. In addition to boundary scan pin reduction techniques, this “split fixture” concept has often been used by 3070 or i3070 owners to test high node count boards.

Our latest Keysight high node count solution uses a newer, Keysight-proprietary shorts detection algorithms to successfully provide 100% shorts test coverage on up to 10,400 nailed nets.

Operator use is designed to be operator friendly

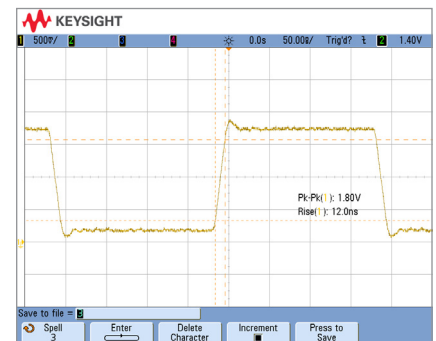
The Keysight high node count solution Start/Stop buttons, failure messages and other operations will be instantly familiar to any 3070 test operator.

3070/i3070 system requirements

- Keysight Technologies Series 3 or Series 5 original frame
- Windows controller
- 3070 Family software revision 7.20pd or later

Supports all 3070 tests

- Shorts
- Opens
- Vectorless
- Cover-Extend Technology
- 1149.1 and 1149.6
- Unpowered test
- Powered test
- 3070 libraries
- DDR Test
- Device programming





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