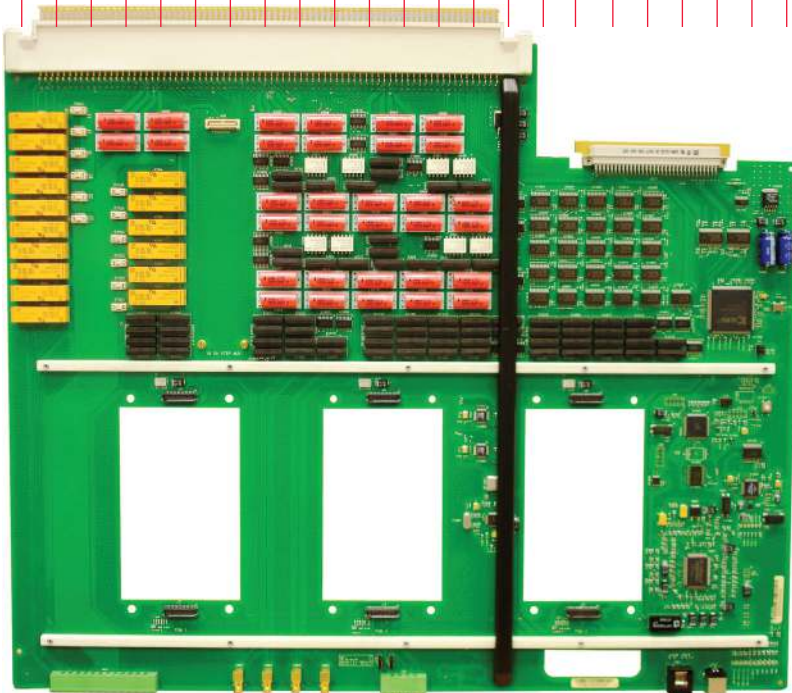


Keysight Technologies

Utility Card for In-Circuit Test

Data Sheet



The Keysight Medalist i3070 Series 5 In-Circuit Test (ICT) system introduces a new Utility Card that enables:

1. Flexibility to incorporate external circuits to balance between ICT & Functional testers and reduce investment on functional testers
2. A wider range of power handling capabilities for today's high powered products, to reduce investment on power supply hardware

**The Series 5 – Saves Costs.
No Compromise.**



Introduction

This data sheet describes the features found on the Keysight Technologies, Inc. utility card. These include:

- Capability to add external electronics circuit boards by plugging the boards directly onto the utility card.
- Connection of external signals and instruments through two balanced 1:4 multiplexed signal ports.
- Control and isolation of external signals through eight general purpose relays.
- Flexible power supply multiplexing that allows up to six boards on a panel to be powered up using one power supply, or to allow for high current power to be supplied to one board.

Utility Card Features

Balanced 1:4 multiplexed 75 Ω ports and general purpose relays

Two balanced 1:4 multiplexed 75 Ω ports are available on the utility card to allow users to add differential signals to the board under test through the utility card. These ports can be used individually for single sided signals allowing for up to four single ended signals to be channeled through the utility card.

Table 1.

Parameter	Rating
Number of ports	2
Multiplexing	1:4
Connector type	
Bandwidth	3 dB (at 35 MHz \pm 3 MHz)
Crosstalk	< 1 MHz (-55 dB \pm 2 dB)
Maximum current	2 A \pm 0.5 A
Impedance	75 Ω per pair

The balanced multiplexed ports are isolated using relays. These relays can be used by themselves as general purpose relays.

Flexible 1:6 multiplexed power supply channels

The utility card allows 50 V at 10 A on each of two 1:6 port power supply channels. Each power supply channel can be user-configured to be multiplexed to supply power to up to six individual boards on a panel or the individual relays can be configured to switch together to enable testing of a single board which requires 10 A current power supplies.

Plug-in electronics

Plug-in card mechanical specifications

The mechanical specifications of the plug-in card are described in Table 2.

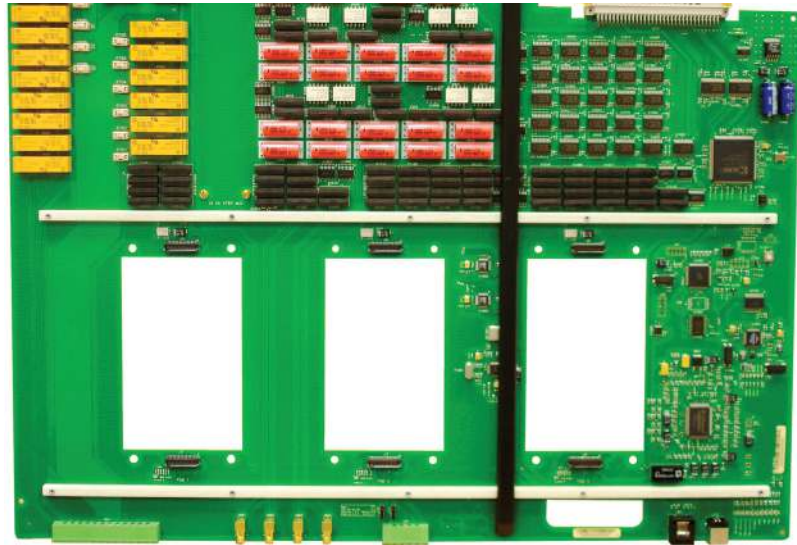


Figure 2. Location of balanced multiplexed ports on the utility card

Table 2. Mechanical specifications of the plug-in card

Parameter	Specifications
Physical dimension	2.953 inch by 6.006 inch (75.00 mm by 152.55 mm) (PCB should have a nominal thickness of 0.062 inch)
Component placement	Can be on both sides, but not exceeding 3 mm on the top side and 10 mm on the bottom side
Inputs	One USB port and one Ethernet
Outputs	18 pins with disconnect relays to mint pins
Power supply	5 V @ 500 mA (maximum) or 12 V @ 2 A (maximum) or externally routed (max of 12 V at 2 A)
Communication	1. USB 2.0 to the host PC/workstation 2. Ethernet communication via a class 2 switch controller

Utility Card Features

Plug-in electronics

Electrical specifications of the utility card

There are three empty slots designed into the utility card to allow users to add three external electronics on the card. The external electronics or plug-in card will drive or receive signals from the unit under test through the MINT pins on the utility card that are connected to the slots. Each MINT pin is isolated from the external electronics using relays. Like other pin cards, there are 78 MINT pins on the utility card.

Keysight Medalist software or the control card on the testhead will only control the 18 disconnect relays to the 18 signals pin on the 30 pins connector and not the plug-in card circuitry or features. All controls to the plug-in cards will be done by the application software in the form of a .dll that comes from the manufacturer that is installed and run on the PC controller of the test system. The .dll is written by third party vendors who will provide the plug-in card that will be installed on the utility card. The Keysight Medalist software has included APIs that allow the BT-Basic environment to communicate with the .dll in order to control the plug-in card on the utility card. The PC controller

communicates with the plug-in cards via USB or Ethernet. The USB would be provided as a main port connected to a hub class device on the utility card. Each plug-in card would then implement its own class of USB device as to be interpreted by the Window XP based PC controller.

For more details on the design of the plug-in card or associated .dll, please call your nearest Keysight sales representative who will put you in touch with our in-circuit test experts for further discussions.

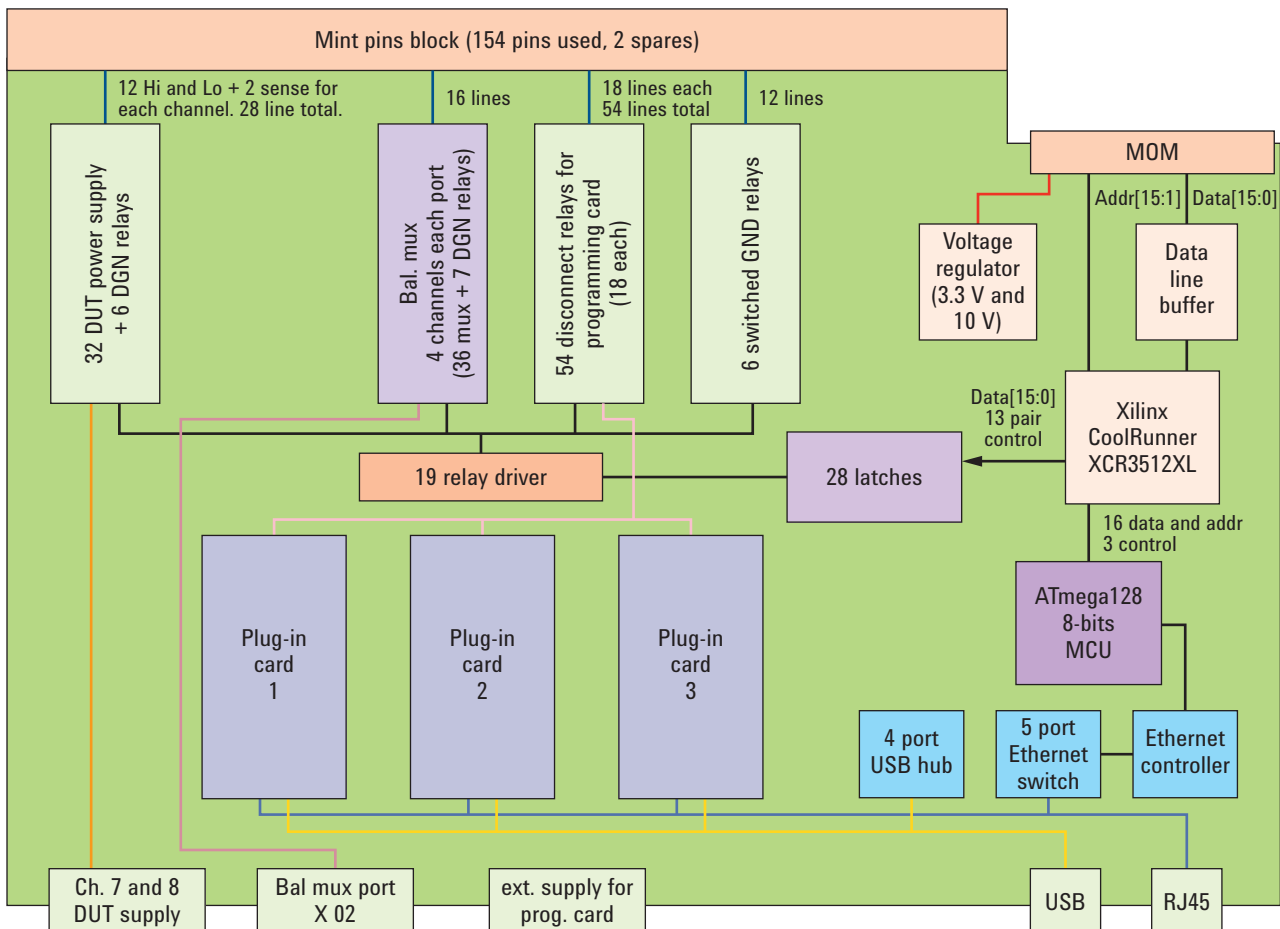


Figure 3. Block diagram of the utility card

Related Keysight Literature

Publication title	Pub number
Keysight Medalist i3070 Series 5 In-Circuit Test System Data Sheet	5990-4344EN
Keysight Medalist i3070 ICT Data Sheet	5989-6292EN
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
Keysight Medalist Bead Probe Technology Product Overview	5989-5802EN
Comparing Contact Performance on PCBA using Conventional Testpads and Bead Probes White Paper	5989-9918EN
Using Bead Probes to Increase Test Access Case Study	5989-8420EN

Related literature can be located on Keysight's Medalist In-Circuit Test Solutions web site at: www.keysight.com/find/i3070 under the "Library" tab.

For more information on Keysight's suite of award-winning in-circuit test solutions, please visit www.keysight.com/find/ict



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