



# Embedded System Diagnostic Test IP

## Product Brief


Scope of the Test	Applications
<p>The Embedded System Diagnostic Test is a standalone software application designed to run on a customer's Linux platform. This test will run board level tests to test every chip in the system. Once every chip is tested and verified the diagnostic will configure all of the devices in the system. At this point high-level testing such as Ethernet Testing, Speed/Bandwidth Tests can be run.</p>	<p>Typical Embedded Systems, include 8-bit, 16-bit and 32-bit microprocessors, micro-controllers, DSPs, etc.  <b>Examples:</b> Medical devices, telecommunication, data communications, data center, consumer products which have embedded processors.</p>
Diagnostic Test Features	
<p>All the hardware components with software programming interfaces will be tested for hardware design verification and manufacturing trouble shooting.</p>	<ul style="list-style-type: none"> <li>• <b>Memory Devices:</b> ROM, FLASH, DDR, DDR2, DDR3, SRAM, NVRAM, EEPROM, etc.</li> <li>• Networking Communication such as Ethernet PHY, Switches, Framers, Switch Fabrics, etc.</li> <li>• FPGA, ASIC and CPLD's.</li> <li>• Various types of sensors, temperature sensors, voltage sensors, pressure sensors, etc.</li> <li>• Optic transceivers, SFP, SFP+ and XFP's.</li> <li>• LED, LCD panel and Touch Panels.</li> </ul>
Solution	Benefits
<ul style="list-style-type: none"> <li>• The diagnostic test will exercise the hardware in depth to the design specification. For example, the memory test will include a walking 0, walking 1 test for the data and address buses, fixed and random data pattern tests.</li> <li>• The various hardware buses will be tested such as I2C, SPI, SPI4.2, SERDERS, MDIO, PCI, PCIe, etc.</li> <li>• The temperature sensors will be tested by setting the high thresholds and the low thresholds. Voltage controllers will be set to margin high and to margin low to test the system.</li> <li>• The hardware interrupt tests will be generated and tested at microprocessor for proper operation.</li> </ul>	<ul style="list-style-type: none"> <li>• The diagnostic tests will be used to help hardware designers to verify their designs. The hardware board can be configured by diagnostic code to run the tests to find any design problems in the design.</li> <li>• Manufacturing will use these diagnostic tests to verify their production boards as well as trouble shooting the board manufacturing problems. This prevents costly field recalls.</li> </ul>

## Embedded System Diagnostic Test IP Solution

The diagnostic tests will run on a customer's Linux platform to perform various tests, from chip to board level tests. These tests will help the hardware designers and manufacturing groups trouble shoot systems.

## Service and Support

Innovaide's highly experienced team will ensure a seamless integration and hand-off of the Embedded System Diagnostic Test IP Solution into your verification methodology and environment.

 Global Engineering Services	<b>Contact Information</b> Email: sales@innovaide.com Web: www.innovaide.com Phone: (508)-630-0307
	<b>Headquarters:</b> 241 Boston Post Road West. Marlborough, MA-01752
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