

# ReaLINK® HIL-3001 Open System Hardware-in-the-Loop

*On Board Self-Test ... like having a tech 24/7*

XANALOG'S ReaLINK® product line consists of real-time hardware solutions for use with the Mathworks Simulink® simulation language. A unique aspect of XANALOG's ReaLINK Line is the ability to self test your hardware system. With every ReaLINK product we provide the capability to verify that our system is functioning properly whenever you want.

## Getting started with ReaLINK

The HIL-3001 is a package which gives you the hardware interfaces for your hardware-in-the-loop simulation and testing needs. The system comes pre-assembled, ready-to-go. Simply connect your HIL-3001 system to a host machine running MATLAB® xPC Target, and you are up and running. In addition the self test model that we send with every system can be easily used as a template to give you a starting point in your own project.

## More on On-Board Self Test

Each ReaLINK product is shipped with a wire wrap-around harness, as well as a test model for use in MATLAB xPC Target. The analog-to-digital channels are wired to the digital-to-analog channels. The digitals are wrapped around to themselves. The test model generates signals and then compares the expected value received with that of what is observed. This allows for ease of system verification, as well as troubleshooting. You can know that our system is performing as expected before you hook it up to any of your own hardware.

## KEY FEATURES

- Each ReaLINK system is thoroughly tested with the latest version of MATLAB/Simulink
- Real-time simulation and testing right out of the box
- On-Board Self Test hardware and software
- Open-system COTs hardware saves you money
- Open-system COTS hardware allows for expanding your system to meet your needs (Just speak with our engineers, we can add many different interfaces to our systems)
- Single point support for your hardware and software
- At any time you can verify the system using the same procedure that we do
- Self-Test Model can be used as a template to drop in your own Simulink model



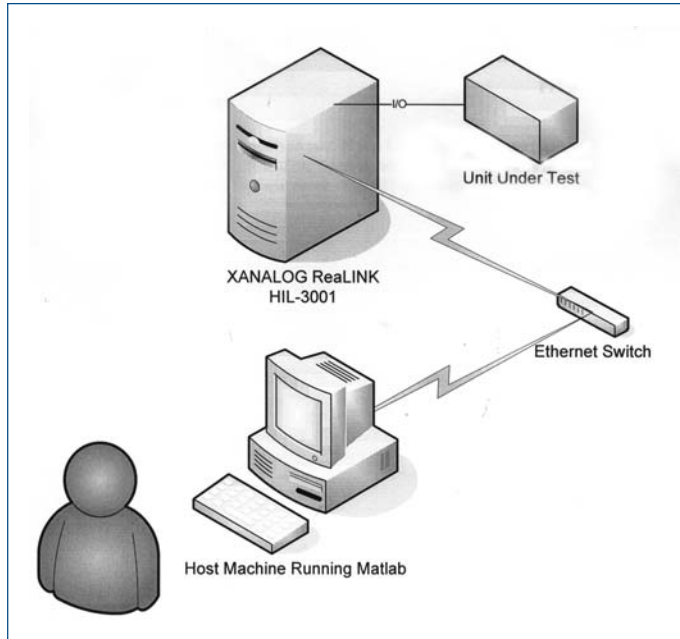
XANALOG ReaLINK for Simulink is a ready-to-use, out-of-the-box system that seamlessly links with The Mathworks Simulink

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## SPECIFICATIONS

<b>Processor</b>	<ul style="list-style-type: none"> <li>■ x86 compatible</li> <li>■ 3GHz Clock</li> <li>■ 256MB RAM</li> </ul>
<b>Analog Output</b>	<ul style="list-style-type: none"> <li>■ 12 D/A channels</li> <li>■ 16-bit resolution (1 in 65,536)</li> <li>■ Switch selectable output ranges</li> <li>■ One D/A per channel</li> <li>■ Output ranges: <math>\pm 10V</math>, <math>\pm 5V</math>, 0-10V, 0.5V</li> <li>■ Output current: <math>\pm 5mA</math> min.</li> <li>■ Output resistance: <math>&lt; 0.1\Omega</math></li> <li>■ Short circuit current: 40mA min.</li> <li>■ Range selection: Switch selectable</li> <li>■ Output setting: (to 0.003%) 5<math>\mu s</math> typ., 10<math>\mu s</math> max.</li> <li>■ Output updates: Independent or simultaneous</li> </ul>
<b>Analog Input</b>	<ul style="list-style-type: none"> <li>■ 16 single-ended / 8 differential analog inputs</li> <li>■ 16-bit resolution</li> <li>■ 100kHz maximum sample rate</li> <li>■ 4 digital inputs</li> <li>■ 4 digital outputs</li> <li>■ 3 counter timers</li> </ul>
<b>Digital and Serial I/O</b>	<ul style="list-style-type: none"> <li>■ 48-bits of digital I/O</li> <li>■ RS-232 Synchronous or Asynchronous</li> </ul>
<b>Pulse Functions</b>	<ul style="list-style-type: none"> <li>■ Counters: 10, 16-bit</li> <li>■ I/O levels/drives: CMOS family</li> <li>■ External input frequency: up to 7MHz</li> <li>■ On-board XTAL: 10MHz (divided by 10 or 2)</li> <li>■ XTAL stability: 100ppm</li> <li>■ Functions (2 functions at a time): event counting, pulse width measurement, frequency measurement, frequency division, generating complex duty cycles and much more</li> <li>■ Supports one-shot and continuous modes</li> </ul>
<b>Chassis</b>	<ul style="list-style-type: none"> <li>■ Industrial Rack-Mount Chassis</li> <li>■ Width: EIA standard 19" at flanges</li> <li>■ Height: 6.75" (176.53mm)</li> <li>■ Depth: 18.25" (463.55mm)</li> <li>■ Rack Depth: 16.15" (410.21mm)</li> <li>■ Protrusion from rack: 2.1" (53.34mm)</li> </ul>

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SYSTEM DIAGRAM

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## Hardware Requirements

In HIL-3001 System requires a Host machine capable of running MATLAB, as well as an Ethernet connection to link the Host machine to the HIL-3001.

## Software Requirements

The HIL-3001 System requires the following on the Host Machine:

- Microsoft® Windows® 2000 or XP
- MATLAB
- Simulink
- Real-Time Workshop
- xPC Target
- C++ Compiler (Such as Microsoft's Visual C++)

## Ordering Information

XANALOG Price: \$14,500\*  
ReaLINK® HIL-3001

\*excluding Mathworks Software

Our engineers stand ready to assist you. If you have interface or performance needs not covered by the HIL-3001, due to our open system configuration, it is relatively simple to add additional modules and functions. You can reach XANALOG at +1 617 876-3900 to talk with an engineer today.

