

## HomePlug Technology and Testing

The use of residential power line to facilitate in-home high speed networking is now a proven technology and is rapidly becoming a popular choice in many parts of the world. To promote widespread adoption of this technology and the required interoperability between devices from multiple vendors, the HomePlug Powerline Alliance, an industry standards body, has defined various standards as well as a Compliance and Interoperability test plan.

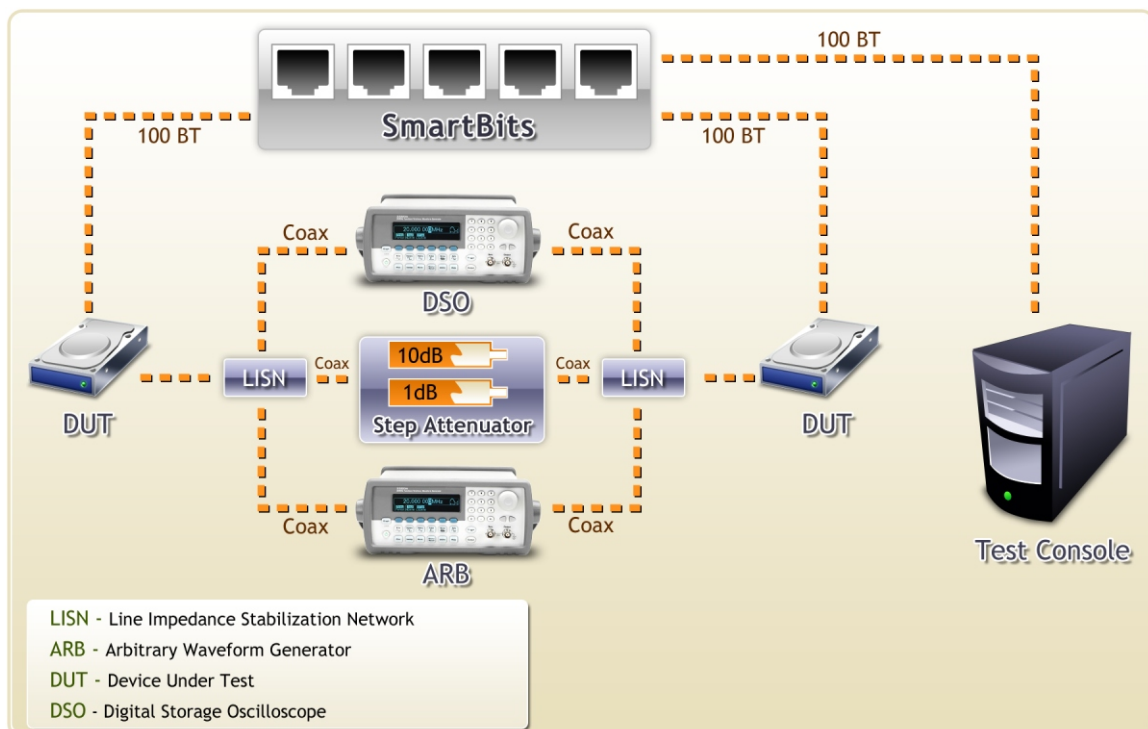
As with all new technologies, during the early stages of development and deployment, it is necessary for manufacturers to test compliance to standards and measure performance, such as whether the devices can handle the high data-rate and QoS requirements required for home networking. Polaris Networks with its proven expertise in test tool development and testing services is offering a comprehensive QA/Testing service to help manufacturers meet performance and interoperability goals required for successful deployment of HomePlug devices.

Polaris Networks has a long history of developing test tools and providing testing services to vendors in a number of technologies, such as ATCA/MicroTCA/AMC, WiMAX and RFID. These testing services range from Conformance Testing to customized QA/Testing services specific to client requirements. Polaris Networks provides Pre-Certification testing services to Cisco CCX Partners.

### Why Use Polaris Test Services

Polaris Networks has been actively involved in residential networking technologies, in particular with Powerline Networking, for a number of years and has a fully equipped test laboratory to handle MAC Layer testing of HomePlug devices. Other advantages include:

- ❖ Expertise in HomePlug technology working with HomePlug silicon provider
- ❖ Experience in various other Conformance Testing, including WiFi (Cisco CCX), RFID, WiMAX
- ❖ Widely recognized expertise in Test & Measurement tools development and test methodology



HomePlug Test Bed Setup

## System Verification Goals

- ✓ Test basic two-node and multi-node performance in laboratory and field environments
- ✓ Verify MAC Functions and Features
- ✓ Test operation and performance of the interface modes provided by the IC
- ✓ Test coexistence and interoperability with HomePlug 1.0 and Turbo
- ✓ Verify operation of IC utility / diagnostics software
- ✓ Test operation and performance in customer application scenarios
- ✓ Present test criteria and results in a pass / fail checklist as well as a detailed test report

## System Verification and QA

QA/Testing services related to System verification is usually tailored to meet client requirements. In general, the following areas are covered:

- ◆ Installation
- ◆ Firmware Upgrade, both single device and "gang upgrades" of multiple devices
- ◆ Configuration of security settings
- ◆ Device Management and Configuration via various supported interfaces (e.g., proprietary desktop application, browser-based HTTP interface, SNMP, TR-069, etc)
- ◆ Performance, including tests for throughput, latency, jitter and packet loss.
- ◆ Quality of Service, including voice and video traffic testing
- ◆ Various kinds of bridging or routing, including Ethernet / WiFi / USB, etc.
- ◆ Microsoft WHQL testing for PCI cards.

## MAC Conformance Testing Service

The goal of MAC Conformance testing is to reduce the time and cost of obtaining formal certification. This is achieved through the simple expedient of providing test results with a detailed analysis that will identify bugs and areas of non-compliance.

Extensive testing will be done to determine compliance with HomePlug Power line Alliance's Phase II Compliance & Interoperability (C&I) Test Plan (Section 7.4 - 7.7) for HomePlug AV devices.

Polaris Networks has developed software for MAC Conformance Testing Service. These software tools are Windows applications and will be used for manual as well as automated testing. For manual testing, Polaris tools are used for creating and transmitting HomePlug (AV and Hybrid) packets over electrical lines as well as capturing and decoding packets from the powerline. The front-end of the software are Polaris' own products. These applications use custom-made libraries for HomePlug packet transmission and capture.

For automated testing, Polaris Networks uses its proprietary platform as test harness. The platform is a Windows application that is capable of configuring test bed, run tests and view results. The test harness will use the custom HomePlug libraries for packet transmission and capture. Polaris provides test scripts written in TCL that will be executed from the test platform. These test scripts will cover C&I tests as well as customized SQA and regression tests.

Additionally, Polaris can also provide test coverage for legacy

## MAC Conformance Testing Service

- ✓ Saves time and money through early detection of non-compliance areas
- ✓ Written report with a detailed analysis of test results
- ✓ Consulting help available for ongoing support

## Customized QA/Testing Services

This is part of Polaris's generalized offering to manufacturers interested in outsourcing testing and QA functions in several technology areas, such as ATCA / MicroTCA / WiMAX, RFID, WiFi and HomePlug. The objective of this service is to save testing time and related costs for client companies.

The testing services offered range from one-time testing to meet a particular project goal to a full service support for all ongoing testing needs of a product development organization.

Polaris has a fully-equipped laboratory required for such testing activities. Polaris's team of test engineers is intimately familiar with industry standard test tools used in various technologies.

### Customized HomePlug Testing

- ✓ Fully equipped laboratory to handle MAC Layer testing of all HomePlug devices
- ✓ Experienced Test Engineers, fully conversant with HomePlug Technology
- ✓ Proven expertise in conformance, interoperability testing and performance measurement.

## CONTACT INFORMATION

For further information, call a Polaris Networks sales representative at the phone numbers listed below, or email us at: [sales@polarisnetworks.net](mailto:sales@polarisnetworks.net).

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