HomePlug Powerline Alliance Fact Sheet

An industry-led initiative established to provide a forum for the creation of specifications for powerline networking products and services, the HomePlug Powerline Alliance is driving the adoption and accelerating the demand for powerline networking products and services.

Alliance Members

Currently, the Alliance includes more than 70 industry-leading companies. Member companies span various technology business sectors, including hardware, services, software, semiconductor design, consumer electronics, utility and retail. HomePlug alliance sponsors include:

- Atheros
- Cisco Systems
- Comcast
- GE Energy
- Gigle Networks
- Motorola
- NEC Electronics
- SPiDCOM

Mission

The alliance's mission is to enable and promote rapid availability, adoption and implementation of cost effective, interoperable and standards-based home powerline networks and products.

Technology Specifications

HomePlug 1.0

In the spring of 2001, the HomePlug alliance finalized its full draft specification for HomePlug 1.0. To ensure reliability, speed and interoperability, it conducted extensive field-testing of its baseline technology in more than 500 homes throughout North America. In June of 2001, the HomePlug alliance published, and made available to its members, an Ethernet-class home powerline networking 1.0 specification that allows for ubiquitous, high-speed, cost-effective home connectivity. Millions of HomePlug-certified products now in use worldwide.

HomePlug AV

HomePlug AV supports distribution of data and multi-stream entertainment including High Definition television (HDTV) throughout the home. The HomePlug AV specification provides the best solution for high quality digital video distribution, with secure connectivity and built-in Quality-of-Service (QoS), at a cost that is competitive with other home networking alternatives. HomePlug AV offers co-existence modes enabling Broadband over Powerline (BPL) co-existence, multi-network operation, hidden node service and backward compatibility with HomePlug 1.0 certified products.

HomePlug AV2

The alliance is developing HomePlug AV2 as the true next-generation high-bandwidth powerline standard to meet the demands of emerging consumer applications such as IPTV, multi-user gaming, multiple HDTV streams, distributed home storage systems, VIOP, and home IT networks. HomePlug AV2 also improves on whole home delivery of high bandwidth signals in homes and multi-dwelling buildings. HomePlug AV2 is fully interoperable with HomePlug AV and HomePlug GP, and will be brought into the IEEE 1901 standard once the spec is complete. HomePlug AV2 offers Gigabit speed at the physical layer and 600Mbs+ at the MAC layer. The AV2 spec is on schedule for completion in late 2009 or early 2010, with products expected to ship in early 2011.

HomePlug Smart Energy

In May 2009, the HomePlug Alliance announced the completion of the Market Requirements Document for HomePlug Smart Energy. Smart Energy technology will create a new class of powerline communications products that offer lower cost and low power consumption, while also being fully interoperable with both the current HomePlug AV standard and the forthcoming IEEE 1901 standard.

Also part of this effort, the HomePlug Alliance has teamed with the Zigbee Alliance to create a Smart Energy software platform. This allows utility companies to use a common language when sending messages from the Smart Grid to devices that exist inside the home. The initiative enhances the capabilities of Smart Energy to incorporate new features, support ZigBee wireless and HomePlug wired devices, and accelerate the development and certification of in-home devices capable of plugging into the Smart Grid such as thermostats, pool pumps, water heaters, appliances and plug-in vehicles.

Recently the Electric Power Research Institute (EPRI) began collaborating with the group which counts among its members the HomePlug Powerline Alliance, the Zigbee Alliance, American Electric Power, Consumers Energy, Pacific Gas and Electric Company, Reliant Energy, Sempra, and Southern California Edison.

HomePlug Access BPL
HomePlug Access BPL is a technology that delivers Internet access and other digital services to homes via the outdoor power lines. In March 2007, the HomePlug Access BPL Working Group completed the initial draft of the HomePlug Access BPL specification, which was incorporated into the IEEE P1901 working group baseline technology for its Access cluster. At this time, the efforts of the HomePlug Access BPL Working Group are synchronized with supporting the IEEE P1901 Access cluster. Based on the requirements outlined in this document, the HomePlug AV technology was chosen as the baseline technology for BPL.

HomePlug Command & Control
The HomePlug C&C specification enables advanced, whole-house control of lighting, appliances, climate control, security and other devices. The specification addresses the growing need for a low-cost yet high-performance and reliable technology for home control. Consumers can expect to see a breadth of solutions for utility companies and their customers, including advanced energy management, smart-grid applications, and automated meter reading.

HomePlug GP (Green Phy)
The alliance is developing HomePlug GP with input from major utility companies as the smart grid communications protocol for connecting home appliances such as HVAC and smart meters to utility companies for smart grid applications. HomePlug GP is named in the National Institute of Standards and Technology (NIST) report on smart grid interoperability standards roadmap. HomePlug GP has a raw data rate of 3.8Mbs with a 1Mbs MAC layer throughput and is interoperable with HomePlug AV. Work is currently underway to finalize the standard, and it is expected that products will ship in the late 2010 timeframe.

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HomePlug Powerline Alliance History

August 2009	More than 35 million HomePlug products shipped
July 2009	HomePlug AV Technology Enables IEEE 1901 Draft Standard
May 2009	Gigle Semiconductor, Intellon Corporation, NEC Electronics and SPiDCOM Technologies join HomePlug Powerline Alliance board of directors
	US Department of Energy specifies HomePlug smart energy profile in Initial Smart Grid Interoperability Standards Framework
	HomePlug Powerline Alliance Charts Smart Grid Technology Path
February 2009	EPRI collaborates with HomePlug and ZigBee to define smart energy standard for consumer applications
January 2009	More than 25 million HomePlug products shipped
December 2008	HomePlug technology incorporated into IEEE P1901 standard baseline
November 2008	HomePlug completes Market Requirements Document (MRD) for HomePlug AV2 technology
August 2008	Utilities, HomePlug and ZigBee team up to create wired HAN standard
May 2008	Shipments more than double to more than 18 million in last 12 months
	HomePlug 1.0 Technology incorporated into TIA-1113 standard by Telecommunications Industry Association
	80 HomePlug-certified products available worldwide
January 2008	Global shipments exceed 15 million products
December 2007	11 new products pass HomePlug 1.0 compliance and interoperability (C&I) product certification testing
November 2007	SPiDCOM's Frederic Onado named vice president of EMEA for the Alliance
	Hosted its HomePlug European Executive Seminar 2007
	More than 40 products pass HomePlug AV certification
October 2007	HomePlug/Panasonic Proposals are sole remaining proposals in IEEE 1901 standardization process for in-home and access powerline communications
	More than 12 million HomePlug products shipped
	HomePlug Powerline Alliance announces intent to certify IEEE 1901 products based on merged HomePlug/Panasonic proposal
	HomePlug Powerline Alliance Board of Directors ratifies HomePlug Command and Control 1.0 specification

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RadioShack CEO Julian Day, Cisco-Linksys' Martin Mannachie, and BusinessWeek's Steven Wildstrom keynote the 2007 HomePlug Powerline Technology Conference

September 2007   HomePlug Powerline Alliance and Panasonic submit merged proposal to the IEEE P1901 work group for BPL

July 2007   Conducted the HomePlug AV compliance and interoperability (C&I) product certification "Plugfest" – over 40 products passed

June 2007   More than 10 million products shipped

Hosted its third Japan Executive Seminar

DSL Forum includes HomePlug technology in their broadband home specifications

May 2007   More than 9 million products shipped

Intel discloses plans to include HomePlug AV technology as an optional feature on select 2008 desktop platforms

March 2007   HomePlug grants 14 products from 11 companies "Designed for HomePlug AV" mark

November 2006   TCL joined Board of Directors

LG Electronics joined Board of Directors

Texas Instruments (TI) joined Implementers' Forum Board of Directors

Hosted HomePlug European Executive Seminar in conjunction with CONNECTIONS Europe

October 2006   Hosted its Second Annual HomePlug Powerline Technology Conference

August 2006   Awarded HomePlug 1.0 certification logo to 20 products

July 2006   Hosted its second Japan Executive Seminar

March 2006   Technology from Yitran Communications adopted as Command & Control baseline

Membership reached 65 companies

More than 4.5 million products shipped

Coexistence, Compliance and Interoperability Program initiated

January 2006   Samsung joined Alliance and Board of Directors

Announced first HomePlug AV products

December 2005   Members announce HomePlug AV silicon shipping

Approved the final HomePlug AV specification and made it available to members

November 2005   More than 3 million HomePlug-certified products shipped

Reached more than 60 different HomePlug 1.0 enabled products available

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	Hosted its premier Japan executive seminar
October 2005	Kicked off the first HomePlug world tour
September 2005	Announced that GE Securities joined the Implementers' Forum Board of Directors
	Hosted its first HomePlug Powerline Technology Conference
August 2005	Enters final development stage of the HomePlug AV specification
	Formed Implementer's Forum Board of Directors and Individual promoter's groups
	Intel, Linksys and Motorola joined the HomePlug board
	Matthew Theall of Intel elected president of the Alliance
July 2005	Delivered universal coexistence solution for powerline communications
June 2005	Requested proposals for Command and Control technologies (RFP)
March 2005	Began a specification effort for low-cost Command and Control technologies
February 2005	Joined efforts with The United Power Line Council
January 2005	Created a utility-class membership to enhance BPL specification effort
October 2004	Completed the advanced preliminary specification for HomePlug AV
July 2004	Announced the specification development for HomePlug BPL
January 2004	Demonstrated the capabilities of HomePlug AV technology at CES
May 2003	Began the HomePlug AV baseline-technology selection process
February 2003	HomePlug AV market requirements made available to members
October 2002	Announced plans for the next-generation specification, named HomePlug AV
January 2002	Member companies unveiled HomePlug 1.0 certified home networking products
November 2001	Released its HomePlug 1.0 Certification Program in November of 2001
June 2001	Published the HomePlug 1.0 specification and made available to alliance members
May 2001	Finalized the initial draft specification for HomePlug 1.0
March 2000	Formed the Alliance in March 2000

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HomePlug Powerline Alliance FAQ

Since HomePlug networking is the global standard for high-speed powerline networking, the Alliance fields questions every day from all around the world.

With millions of HomePlug certified products in use, more and more people are finding that HomePlug networks are far easier to install than dedicated network cable, and they also help to optimize the use of wireless networks by allowing the best placement of access points.

The lines between computing, communications and entertainment markets continue to blur. HomePlug AV – driven by the Alliance's consumer electronics and service provider members – is built from the ground up to support entertainment applications, such as HDTV.

This document addresses the common questions related to the following:
- The organization of the HomePlug Powerline Alliance
- Powerline Communications Technology
- The Alliance's specifications: HomePlug AV, HomePlug 1.0, HomePlug Access BPL, and HomePlug Command & Control
- Future directions for the Alliance

Organizational Overview

What is the HomePlug Powerline Alliance?
The HomePlug Powerline Alliance was founded in March of 2000. Since most electronic devices already use power outlets to receive power, the goal of the Alliance was create a way that these same power outlets and electrical wires could be used to connect the devices to each other and to the Internet. The Alliance achieved this by evaluating technologies and creating a specification. The HomePlug 1.0 specification was released in June of 2001, which was followed by HomePlug AV in 2005 and HomePlug Command and Control in 2007.

Why was the HomePlug Alliance formed?
Creating a network through the wires already used by electrical current is "common sense" to many people. Over the years, proprietary methods were developed, yet there was no recognized industry standard. To develop a common approach that would broaden the market for products using the technology, the Alliance created HomePlug specifications. Today, HomePlug networking is the globally recognized standard for high-speed powerline networking with millions of products in use on six continents.

The Alliance works to get the message out through marketing programs and end-user education programs. This helps to accelerate the worldwide demand for HomePlug-certified products.

Which companies currently serve on the HomePlug Powerline Alliance Board?
The HomePlug Board of Directors is comprised of industry leaders from the Alliance's Sponsor companies that promote the strategic goals and the mission of the HomePlug Powerline Alliance. The Board of Directors currently consists of representatives from Cisco, Comcast, GE Energy, Intel, Motorola, Sharp and Texas Instruments. Contributor members are Arkados, Corporate Systems Engineering, Gigle, Intellon, Renesas, SPiDCOM and Yitran

What other companies are members of the HomePlug Powerline Alliance?
A complete list of member companies is available at www.homeplug.org/about/roster.

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What is the structure of the Alliance?
To accelerate the global proliferation of products based on HomePlug standards, the Alliance is led by a Board of Directors, consisting of Sponsor-level members of the Alliance.

Contributor Associate members are instrumental in contributing technology to the Alliance's standards and continue to play a key role in the development of HomePlug technology.

Alliance membership allows companies to shape the standards and efforts of the HomePlug Alliance. The levels of membership include: Sponsor, Contributor, Participant and Adopter.

What types of companies can join the Alliance?
Companies in the services, content, retail, hardware, software, semiconductor design and technology sectors are invited to join the HomePlug Alliance to further establish power outlet connectivity and the realization of the connected home.

HomePlug Powerline Communications Technology Overview

What market opportunity does HomePlug technology address?
By creating specifications, standards and certification programs, HomePlug technologies address the problems that have prohibited broad market penetration of powerline networking.

HomePlug certified products leverage the ubiquity of power outlets and electrical wiring to enable scores of connected home applications. The market is growing quickly, and HomePlug networking products are shipping throughout North America, Europe and Asia.

What are the benefits of using power outlets to connect devices found in the home?
HomePlug certified products offer a convenient way to share broadband Internet services. Home networks are far easier to install than the dedicated network cable needed for purely Ethernet-based networks or for the optimum placement of wireless access points. HomePlug AV addresses the need to distribute entertainment content, such as HDTV, throughout a home.

Power outlets are the most pervasive home wiring medium. Power outlet connectivity is available worldwide, affording the use of multiple outlets in every room at a lower cost per connection point. HomePlug technology leverages existing power outlets to provide both power and connectivity. Additionally, the convenience of connecting any device through a power outlet will enable exciting new products covering entertainment, information access and telephony services.

What are the challenges of using power outlets to connect devices in the home?
Past challenges of using power outlets to connect devices in the home included a lack of industry specifications, multiple sources of electric noise, and difficulty passing through phases in the home. HomePlug technology has overcome these challenges by creating specifications with advanced, optimized algorithms that are realized in semiconductor technology.

- Problem Solved: Lack of standards
- Problem Solved: Multiple sources of noise
- Problem Solved: Connecting through different electrical phases

Is the Alliance's powerline technology compatible with other home networking technologies (including phone line, wireless and structured wiring)?
HomePlug technology does not interfere with other non-powerline networking choices, and, in fact, can work together with them. For wireless technologies, HomePlug-certified Wi-Fi access points bridge wireless and powerline technologies, allowing you to connect all your mobile devices. Homes with Ethernet Category 5 wiring will most likely have rooms or walls without available connectivity. Because of the ubiquity of power outlets, consumers are guaranteed to have a power outlet available for non-mobile devices.

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Are there other organizations/Alliances in the home networking space?
Yes, there are alliances that support various technologies, including phone line and wireless technologies. All of these groups share a common vision of helping the consumer realize the benefits of the connected home.

How will the Alliance guarantee certification of products that embed HomePlug technology?
The Alliance has developed a compliance and certification program to ensure interoperability among products from different member companies. Products that pass this program are issued the HomePlug certification mark.

How are the HomePlug technology specifications made available?
The specifications are available to HomePlug member companies. As an open alliance, any company can become a member and have access to the specifications.

HomePlug AV

What is HomePlug AV?
The HomePlug AV specification was approved in August 2005 and delivers raw data speeds up to 200 million-bits-per-second (Mbps) across the powerlines in homes. Driven by key members of the HomePlug Alliance, which includes consumer electronics companies and service providers, HomePlug AV is built from the ground up to support entertainment applications, such as HDTV and home theater. HomePlug AV provides a convenient and cost effective method of distributing HDTV in the home without new wires.

The objectives for the HomePlug AV specification included providing the best solution for high quality video distribution, with secure connectivity and built-in Quality-of-Service (QoS), to ensure a great customer experience at a price that is competitive with other home networking alternatives. HomePlug AV co-exists with HomePlug 1.0.

What HomePlug AV products are available for consumers to purchase?
HomePlug AV certified products are available from companies such as Actiontec, Aztech, Belkin, Cameo, Cisco, devolo, EchoStar, Fujitsu Siemens, Gigafast, LEA, NETGEAR, Sharp, Solwise, Sumitomo and Zyxel. A full list of HomePlug-certified products can be found on the HomePlug Alliance's website at www.homeplug.org/products.

What are HomePlug AV's speed, features and capabilities?
HomePlug AV was designed to support the high-bandwidth and low-latency demands of several simultaneous streams of HDTV and VoIP, made concurrently available in over 90 percet of power outlets in a home. Applications include in-home distribution of audio-video in home theater and data networking environments. HomePlug AV provides a 200Mbps class service at the PHY (physical) layer. After overhead considerations, the MAC layer supports over 100Mbps.

What QoS support does HomePlug AV provide for emerging AV and IP applications?
HomePlug AV provides advanced QoS functions and features geared towards meeting the latency and jitter requirements of all emerging AV and IP applications.

Does HomePlug AV address the "hidden node" issue?
Yes, the "hidden node" issue is a critical one seen by many LAN technologies, including Wi-Fi. HomePlug AV addresses this by using sophisticated network management capabilities, including a proxy networking function.

Does HomePlug AV address security differently than HomePlug 1.0?
HomePlug 1.0 uses several provisions for security including 56-bit DES, with both network and device keys. HomePlug AV enhances these features by using 128-bit AES.

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Is HomePlug AV compatible with HomePlug 1.0?
All HomePlug AV and HomePlug 1.0 devices can exist together on the same power line. HomePlug AV products may also be designed that interoperate with HomePlug 1.0 products.

Which frequency range is HomePlug AV using? Does HomePlug have any plans to use higher frequencies (e.g. above 30 MHz) and if not, why?
HomePlug AV uses frequencies in the range of two to 28 MHz. The Alliance does not currently have any plans to use frequencies above 30 MHz, but there is a possibility for expanding this range to higher frequencies depending on governmental regulations in the future.

What underlying technologies does HomePlug AV employ?
HomePlug AV uses an OFDM PHY with advanced FEC, channel estimation and adaptation. The MAC incorporates both scheduled access (TDMA) with QoS guarantees and contention access (CSMA), with reliable delivery through fast ARQ. HomePlug AV supports TDMA and FDMA for purposes of Broadband over Powerline (BPL) co-existence. The HomePlug AV protocol stack supports a variety of upper layer protocols native to HomePlug AV, 802.3, IP and UPNP.

Is HomePlug AV a global technology?
Yes, both HomePlug AV and HomePlug 1.0 work on power lines regardless of location, subject to local government regulations.

Does HomePlug AV address Access BPL co-existence?
Yes. "Access BPL" is the term used for using powerline communications outside and to-the-home. The members of the HomePlug Powerline Alliance recognize that simultaneous uses of the same powerline for both in-home and to-the-home Access BPL create the need for a co-existence mechanism that will optimize the user experience for both In-home and BPL users. In fact, the HomePlug Alliance has taken this a step further by supporting not only co-existence, but also interoperability between AV and Access BPL. Interoperability will allow devices in both the in-the-home and BPL domains to connect and interact seamlessly.

HomePlug AV has a mechanism to detect the existence of neighbor networks, which includes Access BPL users. This mechanism is required so that in-home-only HomePlug AV users in homes and apartments that are sharing the same physical wire (off of a common transformer) do not interfere with each other - independent of whether Access BPL exists on the line or not. In other words, the need for bandwidth sharing exists inherently within HomePlug AV itself, and the bandwidth management solutions needed for In-home HomePlug AV applications can easily be extended to HomePlug Access BPL.

HomePlug 1.0

What is HomePlug 1.0?
HomePlug 1.0 is HomePlug's first specification for a technology that connects devices to each other through the power lines in a home and was released in November 2001. HomePlug certified products connect PCs and other devices that use Ethernet, USB and 802.11 Wi-F" technologies to the power line via a HomePlug "bridge" or "adapter." Some products, such as connected audio players, even have HomePlug technology built in. These products provide a simple solution for consumers interested in distributing connectivity around their home without adding any new wires.

What type of testing has the HomePlug Alliance conducted on the chosen technology?
The HomePlug Alliance validated its HomePlug 1.0 powerline networking technology through an extensive field trial of 500 homes throughout North America. The success of this field trial led to the completion of the HomePlug 1.0 specification.

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Is there a difference in the performance of the technology when applied to newer homes versus older homes?
After conducting field tests in over 500 homes, HomePlug 1.0's performance has proven consistent regardless of a home's age or size. The field tests also confirmed nearly 100 percent coverage in every home tested.

What HomePlug 1.0 products are available for consumers to purchase?
HomePlug 1.0 certified products such as bridging and routing devices, and combination Wi-Fi access point/HomePlug devices, are available from companies like Actiontec, Aztech, Belkin, Cisco, devolo, EchoStar, Fujitsu Siemens, Gigafast, LEA, NETGEAR, ST&T, and Zyxel. A full list of HomePlug-certified products can be found on the HomePlug alliance's website at www.homeplug.org/products.

What was the process for selecting the baseline technology for the HomePlug 1.0 specification?
The HomePlug Alliance evaluated various powerline-networking technologies through an industry-wide, open evaluation process that incorporated theoretical analysis, lab testing and field trials. The HomePlug 1.0 criteria included a greater than 10 Mbps data rate, whole-house coverage, robustness and ease of implementation.

HomePlug Access BPL

What is HomePlug Access BPL?
Access Broadband Power Line (BPL) refers to a to-the-home broadband access technology. The HomePlug Alliance formed the HomePlug Access BPL Working Group, whose first charter was to develop the Market Requirements Document (MRD) for a HomePlug Access BPL specification. The Alliance made an open invitation to the BPL industry to participate in the development of or provide input for consideration in the MRD. After several months of collaboration between utilities, ISPs and other BPL industry groups, the MRD was completed in June 2005.

Hasn't the Alliance traditionally focused on in-home powerline technologies? Why is the HomePlug Alliance working on a specification for Access BPL?
The Alliance's initial specification focused on In-home use of power line communications. Through this effort and the HomePlug AV specification process, the Alliance brought together some of the industries' top technical engineers in the PLC space. With this diverse multi-company pool of technical talent, and the market-leading experience of all HomePlug Alliance members in enabling successful powerline products around the world, the HomePlug Alliance is a natural fit for near-term standardization efforts in the powerline communications space.

What is the status of HomePlug Access BPL?
In March 2007, the HomePlug Access BPL Working Group completed the initial draft of the HomePlug Access BPL specification. The draft was incorporated into the IEEE P1901 working group baseline technology for its Access cluster. At this time, the efforts of the HomePlug Access BPL Working Group are synchronized with supporting the IEEE P1901 Access cluster. Based on the requirements outlined in this document, the HomePlug AV technology was chosen as the baseline technology for BPL.

HomePlug Command & Control

What is Command and Control?
Command and Control is a low-speed, very low-cost technology intended to complement the Alliance's higher-speed powerline communications technologies.

In September 2007, the HomePlug Board of Directors approved the specification for the lower communications layers for command and control (the PHY/MAC spec). Work continues on the upper protocol layers including the Network layer, Host layer and Profiles. Combined, the Command and Control specifications will enable advanced, whole-house control of lighting, appliances, climate control, security and other devices.

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For more information regarding HomePlug Command and Control, please visit the web page: http://www.homeplug.org/products/homeplug_cc1/.

Why is it important to standardize on a low-cost powerline technology for control?
Market projections indicate that in the coming years, millions of command and control nodes will be sold each month. Having already built standards for high-speed powerline communications, the HomePlug Alliance can create that key market-unifying standard that will increase the total market for command and control applications.

For the past 30 years, home control over power lines has struggled to reach a significant upward inflection point. With a common technology standard, companies can compete by making great products that work together using a common underlying technology. Product manufacturers and the consumer are the ultimate winners in this expanded marketplace.

Future Direction / Additional Information

Where does Powerline Networking go from here?
Two powerful market forces are converging to drive the implementation of effective home networking; high bandwidth consumer applications and the urgent need to develop the smart grid. Both require an effective home network with high QoS for consumer applications (HDTV, IPTV, gaming) and high reliability for smart grid applications. While local area networks in commercial buildings and campuses are ubiquitous with mature standards in place (IEEE 802.3X and IEEE 802.11X), home networking can be characterized as a mix of competing interests and standards that have led to a market comprised of various proprietary solutions that do not interoperate.

The emerging picture has powerline networking serving as the backbone for home networks allowing any device to be connected wherever there is a power outlet in the home. HomePlug is the only powerline technology that is positioned to meet this need due to several factors. HomePlug accounts for about 75 percent of the worldwide installed base, it has a robust certification program experienced in developing and enforcing specifications, and HomePlug has the only true powerline ecosystem with multiple silicon vendors (six) developing and/or shipping products to the market. Added to this, Utilities and service providers are already embedding HomePlug technology in their product offerings, and it is hard to support a logic that would have them install a competing technology that would effectively interfere with and degrade the performance of their existing products. Market forces are now demanding a compatible, interoperable powerline network that offers a comprehensive solution with a future migration path and backward compatibility. The HomePlug Powerline Alliance technology specifications offer the market a broadband solution with HomePlug AV, and smart energy/command and control solution with HomePlug GP, and a migration path to meet future high bandwidth applications with HomePlug AV2.

What are the member benefits?
There are two levels of membership available: adopter and participant.
- *Adopter* members have access to the released HomePlug specification and can attend annual member meetings.
- *Participant* members receive the same benefits as adopter members in addition to being able to participate in the various working groups that drive the regulatory, technical and marketing direction for the Alliance, its technology, and the resulting products.

Membership information is available at **www.homeplug.org/join**.

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