

**Before the
Federal Communications Commission
Washington, D.C. 20554**

In the Matter of)	
)	
Video Device Competition)	MB Docket No. 10-91
)	
Implementation of Section 304 of the Telecommunications Act of 1996)	
)	
Commercial Availability of Navigation Devices)	CS Docket No. 97-80
)	
Compatibility Between Cable Systems and Consumer Electronics Equipment)	PP Docket No. 00-67

COMMENTS OF THE HOMEPLUG POWERLINE ALLIANCE

Founded in 2000, the HomePlug Powerline Alliance is a non-profit industry group with 70 member companies collaborating to create specifications and interoperability certification programs for devices that use powerline communications (PLC) for networking and connectivity. The Alliance also works to accelerate worldwide adoption and competition for PLC technology by collaborating with international standards organizations, such as the IEEE, and through market development and user education programs.

For the consumer, the ease and convenience of installing a HomePlug enabled product is truly “plug and play”. HomePlug technology enables high speed networking by simply plugging in a device to a power socket or outlet. Since HomePlug technology uses the existing electrical wiring throughout the home for connecting devices to each other, there are no hassles with installing Ethernet cables in walls.

The Alliance has certified over 200 different products as compliant with HomePlug technologies. Of primary relevance to the Commission’s inquiry, HomePlug AV was specifically designed to enable the transport of multiple High Definition Audio and Video streams between and among devices throughout a consumers home using the existing powerlines as the physical transmission medium at peak throughput between 100 and 150 Mbps. Therefore, HomePlug AV is capable of adapting Ethernet (100-Base-TX and 1000-Base-T) for distribution in a home without the need for the consumer to install cabling within the home. HomePlug AV technology has already been deployed in millions of devices connected within homes and is in use today for reliable and convenient home networking and Smart Grid applications. Furthermore, HomePlug AV is a baseline technology within the international IEEE P1901 Powerline Networking standard. P1901 has been designed to be interoperable with HomePlug AV but of equal importance mandates coexistence for devices operating on the powerline. The IEEE P1901 Standard is expected to be finalized in the 3rd quarter of 2010. As with all HomePlug based technologies, the Alliance intends to be the primary certification body for devices implementing P1901.

Regarding Internet Protocol television (IPTV) and other applications with set top boxes, millions of HomePlug units have already been deployed by MVPDs¹ internationally. Echostar, France Telecom, AT&T, Deutsche Telekom, Free Sat and more than 40 other service providers incorporate HomePlug devices within their deployments. Leading set-top box manufacturers such as Cisco and Motorola are

¹ multichannel video programming distributors

Sponsor members of the HomePlug alliance and consumer electronics manufacturers such as Sony and Sharp are also members.

In addition to broadband data networking and consumer entertainment applications, powerline networking and HomePlug technology have been recognized as key communications components of the Smart Grid interoperability roadmap for the United States by the National Institute of Standards and Technology of the U.S. Department of Commerce (NIST). GE Energy and Duke Energy are Sponsor members of the HomePlug alliance and other energy company members include American Electric Power, Consumers Energy, Electricite de France, Oncor, Pacific Gas & Electric, San Diego Gas and Electric, Southern California Edison, and Reliant Energy. The HomePlug Green PHY specification, has recently been completed and is targeted to Smart Grid applications. HomePlug Green PHY is interoperable with HomePlug AV and P1901 (at reduced data rates commensurate to low power consumption applications) and is expected to provide a future proof technology for Smart Grid deployments.

In summary, HomePlug AV, HomePlug Green PHY (GP), and the IEEE 1901 Draft Standard are a family of interoperable protocols for PLC networking. HomePlug AV is the only stable and mature broadband-speed PLC standard with multiple chip vendors and product companies shipping commercial products internationally. As previously mentioned, the IEEE P1901 Standard is expected to be finalized in the 3rd quarter of 2010 and since it includes HomePlug AV as a baseline technology, it is well suited for streaming video between devices in a home.

Comments

The FCC seeks comment on a proposed “AllVid” adapter that supports the delivery of MVPD supplied content to devices in the home through a standard interface that is common across all MVPDs.² In the Notice, 100-BASE-TX Ethernet is mentioned as a physical layer technology that could be used to connect the AllVid adapters with navigation devices.³ The Commission seeks comment on the future of Ethernet viability, as well as other physical connectors and whether the physical layer technology should be mandated at all.⁴

A key benefit of the transition to digital television is scalability of HD video resolution and quality as network speeds increase. Physical networking connectivity is a rapidly evolving area of technology that can enable improved digital video quality from MVPD’s in addition to supporting other consumer entertainment applications such as video sharing and gaming. The cumulative and concurrent requirements of home networks in support of applications using multiple, connected video displays is already exceeding a network bandwidth of 100 Mbps.

These trends are underscored by the fact that many MVPD’s are already deploying physical connectivity for IPTV and related video applications on alternative communications networks (e.g., in home coaxial cable) that exceed 100-BASE-TX performance. Furthermore, the NOI mentions an AllVid configuration as providing at least six simultaneous video streams within the home network.⁵ Depending upon the format type of these video streams, but also accounting for other high bandwidth applications running in the home network, 100-BASE-TX may not be adequate in meeting this scenario. Although 1000-Base-T Ethernet would be adequate from a throughput perspective, the need to install Cat5e (or better) cabling could be a major inconvenience for easily (and cost effectively) achieving so called “whole home

² NOI at ¶ 24.

³ NOI at ¶ 26.

⁴ *Ibid.*

⁵ *Ibid.*

coverage”. The HomePlug AV2 specification for next generation PLC networking will be completed in 2011 and is expected to meet the minimum requirements mentioned in the NOI in addition to concurrently supporting additional applications. Expected peak throughput is anticipated in the 200 – 300 Mbps range.

Finally, the FCC seeks comment on the suitability of Internet Protocol (IP) as the communication protocol between the AllVid adapter and navigation devices.⁶ The HomePlug Powerline Alliance is in full agreement that IP is familiar to hardware and software developers, which would allow the retail market to flourish for smart video devices. Since IP is a foundation for other technology solutions (e.g., DLNA and SmartGrid) it is reasonable to assert IP as the best choice for an AllVid communication protocol.

Conclusion

HomePlug powerline communications technology enables true plug-and-play home networks for both high speed video networking as well as Smart Grid applications. An inherent advantage of powerline communications technology is that the power connection *is* the networking interface – no other connector is needed.

If the Commission chooses to adopt rules for access to MVPD-provided content such as the AllVid concept described in the Notice and also chooses to mandate a powerline communications technology, the existent large (and growing) installed base of HomePlug technology via multiple deployment channels (retail consumer self-install, service providers, and utilities involved with SmartGrid), coupled with the HomePlug Alliance’s commitment to compliance, interoperability, and coexistence indicate that HomePlug should be given strong consideration.

However, because home networking technology is rapidly advancing to meet the evolving demands of consumers, perhaps a viable approach to unleashing competition in the retail market for smart networked video devices would be for AllVid to include a standardized networking adapter socket. This would sustain multiple home networking technology choices and flexibility for consumers. This inexpensive adapter socket could include a Gigabit Ethernet MAC interface (GMII/RGMII/SGMII) and provide DC voltage and a low voltage AC powerline connection with a few extra “pins”. The AllVid home networking adapter socket would support a wide variety of physical networking interfaces such as HomePlug powerline networking, MoCA (multimedia over coaxial cable) or Wi-Fi (wireless LAN). The socket would allow future networking technology innovation to be easily adopted and is analogous to the expansion slots used in hundreds of millions of notebook and desktop PC’s. This is a market-proven approach that has already enabled the evolution of communication and home networking technology during the last 2 decades.

Respectfully submitted,



Rob Ranck
President
HomePlug Powerline Alliance
5200 SW Macadam Ave., Suite 470
Portland, Oregon 97239

⁶ NOI at ¶ 27.