

Introducing Simple Network Connection and Smart Grid Initiatives using *HD-PLC*
The HD-PLC Alliance¹ booth at 2010 International CES

In its efforts to promote global adaptation of High-speed Power Line Communication (*HD-PLC*²) technology, as well as further develop compatibility standards for *HD-PLC*-equipped products, the HD-PLC Alliance will have a booth at the 2010 International CES, the world's largest consumer electronics show, to be held at the Las Vegas Convention Center in Las Vegas in the United States from January 7th until January 10th, 2010.

The booth will feature *HD-PLC* modules and dedicated chipsets, as well as their development environment, which can be integrated into various electronic devices to enable high-speed power line communication. Also, through the cooperation of HD-PLC Alliance member companies and companies using *HD-PLC*, over 50 PLC-equipped and feature-added PLC-compatible products such as PLC adapters, PLC routers, and hubs will be on display, including:

- A PLC-equipped HDMI converter, H.264 Codec video transmission set-top box.
- A PLC-equipped USB converter
- Digital signage display devices
- PLC adapters, PLC routers, hubs
- *HD-PLC* integration modules and dedicated chipsets
- PLC accessory devices such as noise filters and surge protectors
- An introduction to an *HD-PLC*-equipped test house used as a development environment

The focus of this year's exhibition includes advances in the ease of setup and connection of an *HD-PLC* network, and, as part of the HD-PLC Alliance's ongoing global warming initiative "Green Ubiquitous"^{3,4}, an introduction to future technologies for household smart energy and smart grids. A series of demonstrations will reveal the convenience and future potential *HD-PLC* has to offer in an accessible format. An exhibit will show how an "Energy Monitoring System" uses a PLC network to gather information about household power usage to visualize power consumption. Another exhibit demonstrates how a "Power Meter Multiplexer" along with a "Fiber-optic/PLC bridge" can be used to create a smart power grid between households and external power infrastructures. There will be demonstrations of how *HD-PLC* will help realize smart energy, where the projected rapid growth of home power generation and electric vehicles, among other developments, can be combined with current power technology and upcoming *HD-PLC* applications to create a new energy-efficient electrical smart grid. Each day at the booth, participating companies will be holding mini technical seminars presenting applications of *HD-PLC*, product samples, and example solutions.

In addition, the global expansion of *HD-PLC* will also be introduced. In efforts by the HD-PLC Alliance to realize a worldwide high-speed power line communication standard, the Wavelet OFDM technique⁵ used by *HD-PLC* has been adopted by the IEEE P1901 working group⁶ as part of the group's baseline standard. The working group's standardization trends and accomplishments will be on display. Also, as an introduction to Alliance activity in China with the network standardization group IGRS⁷, a demonstration of IPTV video transmitted using *HD-PLC* will be held in conjunction with the IGRS booth (South Hall 3 #30363).

Through exhibitions and seminars such as these, the HD-PLC Alliance continues to actively promote the global spread of *HD-PLC* technology throughout the world.

2010 International CES Outline

Name of Exhibition	2010 International CES
Exhibition Dates	January 7 (Thurs) to January 10 (Sun), 2010
Venue	Las Vegas Convention Center and surrounding venues, Las Vegas, Nevada, U.S.A.
Exhibition Sponsors	The Consumer Electronics Association
Booth Location	South Hall 1, 20662
Main Contents of Booth	<i>HD-PLC</i> -equipped and <i>HD-PLC</i> compatible products

· For more information about 2010 International CES, see <http://cesweb.org/>

· For more information about the *HD-PLC* booth at 2010 International CES, see <http://myces.bdmetrics.com/CDT-6278359/HD-PLC/Details.aspx>

1. The HD-PLC Alliance: A group established on September 25, 2007 with the goal of promoting the widespread use of Power Line Communication (*HD-PLC*) technology as well as product compatibility standards.
2. *HD-PLC* is the name for a high-speed power line communication system proposed by Panasonic Corporation. *HD-PLC* is a registered trademark or trademark of Panasonic Corporation in Japan and in other countries.
3. "Green Ubiquitous" is a concept promoted by the HD-PLC Alliance. It refers to the use of a resource-saving, low-energy consumption network that uses existing power lines to easily interconnect electronic devices. The simplicity and benefits of this environmentally friendly concept can provide new levels of convenience at home and at businesses.
4. "Green Ubiquitous" is a trademark of Panasonic Corporation.
5. Wavelet OFDM technique: A proprietary technique developed by Panasonic. Wavelet OFDM uses OFDM (Orthogonal Frequency Division Multiplexing) to achieve efficient high-speed data transmission by applying wavelet conversions orthogonally to each subcarrier. Wavelet OFDM reduces the side-lobe level of each subcarrier with no redundant signals as a result of setting the orthogonality of the wave-frequency domain and time domain.
6. IEEE P1901 Working Group: Established in June 2005 as an IEEE standardization working group to develop the P1901 Draft Standard for Broadband over Power Line Networks (Media Access Control and Physical Layer) for both households and external infrastructure, as well as a proposed transportation technology. The IEEE (Institute of Electrical and Electronic Engineers) is an international, professional organization for the advancement of technology related to electricity and electronics. It is the organization responsible for establishing numerous worldwide communication standards such as Ethernet and wireless LAN.
7. IGRS: Intelligent Grouping and Resource Sharing. Founded under the direction of the Chinese Ministry of Information Industry with support from the Chinese companies Lenovo, TCL, Konka, Hisense, and Great Wall in July 2003. The IGRS Standard aims to enable intelligent grouping, resource sharing and service collaboration among enterprise, public, and personal electronics and communication devices to improve the interoperability and usability among these digital devices, and to create new collaborative application models for digital devices and maximize the resource usage of each device.

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