

Jul 01, 2016

Long range communication over several km via existing power line achieved with automatic routing

Panasonic starts to provide HD-PLC IP core license with "Multi-hop" extension

Efficient in industrial use such as large scale buildings, factory facilities and power networks

Panasonic Corporation announced today that it has started to provide HD-PLC⁽¹⁾ IP core license with "Multi-hop" extension. Panasonic has already been providing an IP license for the HD-PLC high-speed power line communication. The new Multi-hop extension enables HD-PLC to communicate in the range of up to several km (kilometers) in distance and to select and optimize connection routes automatically.

HD-PLC makes possible stable wired network connection with up to 240Mbps as maximum throughput (Physical data rate) without new cabling by using the existing power line as communication line. Panasonic has been providing the license of HD-PLC Complete⁽²⁾ in compliance with IEEE 1901⁽²⁾ as a LAN communication standard since year 2010, and here has added the Multi-hop extension which enables to extend the communication distance up to several km.

This Multi-hop extension technology makes use of a multi-hop connection protocol (CMSR) developed by Panasonic and ratified in the international standard ITU-T G.9905. The existing HD-PLC provides peer-to-peer connection between 2 devices, and the Multi-hop extension enables to extend the communication distance by making communication data hop from device to device. One master device can in theory connect up to approximately 1000 terminal devices in a system, and the data hopping between several devices enables to communicate over long distances such as several km. (The maximum distance is subject to change depending on the conditions of communication)

Additionally, it provides a function of automatic connection route selection in order to reduce the routing load and to respond to the variations of channel characteristics. It thus enables to simplify the installation design with a lot of devices and reduce the maintenance work in case of failure of some devices in operation by automatically changing and optimizing the connection routes. Multi-hop extension makes possible long distance connections using existing power line even in case of installations inside large buildings or outdoor areas where wireless connection would be difficult or unstable.

Furthermore, this HD-PLC IP core has already been provided to MegaChips Corporation for their advanced development. MegaChips has developed and released the Multi-hop connection, high-frequency PLC communication LSI "BlueChip PLC Multi-hop" (M/N: KL5BPLC250WMP) in the market. In the meantime, Panasonic has just started the licensing of the HD-PLC IP core aiming at a wide adoption by general customers.

Hereafter, Panasonic will provide this license to the LSI vendors and will propose practical use cases to the related companies and organizations in order to expand the range of applications in the fields such as the industrial field in which the conventional communication methods might be difficult to install and use. The HD-PLC technology will contribute to the improvement and the advancement of customers' communication methods and work environments.

Notes:

*1: HD-PLC: The name of high-speed power line communication which Panasonic Corporation proposes, registered trademark or trade mark in Japan and the other countries. "PLC" is abbreviation of Power Line Communication.

*2: IEEE 1901: The standardization committee relating to communication standards under IEEE (Institute of Electrical and Electronics Engineers).

*3: CMSR: Abbreviation of "Centralized Metric based Source Routing"

**The content in the following news releases is accurate at the time of publication but may be subject to change without notice. Please note therefore that these documents may not always contain the most up-to-date information.*