Power-line Communication

Technology

- HomePlug 1.0
- HomePlug AV
- HomePlug command and control
- Yitran IT800 PLC modem
- Renesas M16C/6S series PLC micro controller
- Intellon INT5200 power-line transceiver
- Modbus-PLC gateway
- Ethernet to HomePlug bridge

Overview

Power-line communication (PLC) and HomePlug provide mechanism to reuse existing electrical wiring that supply mains power to various appliances, for data communication, thus saving on additional infrastructure.

Expertise

Aftek realizes that PLC has a potential to play an important role in home automation and security systems. Aftek has developed various systems for power line communication. Few examples are mentioned below along with key factors involved in the design and development of the same.

- Aftek has experience of building a system that functions as a narrow-band power-line adapter. The key aspects of the system are as follows:
  - Development of PLC driver for Yitran IT800D PLC module
  - Utilization of DCSK (Differential Code Shift Keying) modulation with collision avoidance scheme and support for narrow-band applications of up to 7.5 Kbps

- Aftek has implemented a home automation system using power-line communication. The key aspects are:
  - Use of Renesas M16C/6S series PLC micro controller, Yitran IT800 PLC modem with its analog front end
  - A Modbus - PLC gateway provides interface to several PLC slave devices, which handles output load on/off control

- Aftek has experience of implementing HomePlug technology that supports higher data rates as compared to power-line communication. The key features of the system are as follows:
  - Development of a 10Base-T Ethernet to HomePlug 1.0 bridge
  - Utilizing Intellon INT5200 integrated MAC/PHY power-line transceiver
  - Implementation of 56-bit DES makes the data transfer quite robust and reliable
  - Development of a host DTE board that is connected to the Intellon chip using MII interface