PLC AMR System

Summary

The HY2000 AMR system automates the collection of all kinds of data from individual meters. It addresses the demand for a cost-effective meter reading system without sacrificing accuracy or reliability by utilizing the proprietary Narrow Band Direct Sequence Spread Spectrum Power Line Communication (PLC) technology, which makes it possible that high anti-interference and low attenuation of signal over transmission.

Functions

The HY2000 AMR system is an efficient system with following functions:
a. Assurance of data accuracy in transmission;
b. Improvement of billing efficiency;
c. Prevention of non-technical losses and tamper;
d. Real time remote control and management,
e. Provision of statistic data for analyze;
f. Reduction of labor costs;
g. Minimizing of system maintenance.

System Configuration

The AMR system is composed of three main subsystems - the Remote Unit (RU), e.g. multi-function single-phase electrical energy meter and multi-function three-phase electrical energy meter, the Concentrator and the Base Station. The Remote Unit transmits the signals over power lines to a Concentrator located on the low voltage side of the distribution transformer. The Concentrator collects the data from each meter, and performs the data storage and part of the data processing. The results are sent from all Concentrators to the Base Station through telephone/GPRS /CDMA net.

Each Concentrator is located on the low voltage side of the distribution transformer. It collects data every half an hour or as set from distance to 1,024 meters through the power lines.

The Base Station is a desktop PC to collect data from all Concentrators. This can be done either directly from the Base Station desktop PC through a dial-up modem or by transferring data files locally to a portable PC, which connect directly to each Concentrator using a standard serial cable (RS232). Both the Base Station and portable PC used for data collection should run AMRView for Windows software.

35kV power line

Telephone/GPRS/CDMA net

Transformer

Base Computing Station (BCS)

Data Concentrator Unit (DCU)

100-240V low voltage single-phase power line

415V Three-phase 4 wire power line

Single-phase kWh meter

Three-phase kWh meter

Figure 1 - A Sample Application of AMR System