Ubiquitous Terminals for Various Telemetry Applications

Overview
We are developing ubiquitous terminals for telemetry of gas, water, electricity, etc., through various communication lines. We have tested a terminal for visualizing electricity consumption that is tuned to WAUN\(^*1\). We have also devised circuit control and data-transmission control techniques to enable conventional communication terminals to accommodate several CTs\(^*2\) and various sensors with low power consumption. We expect that these terminals would be ideal for long-life sensor network platforms.

Features
- Battery life of more than five years makes these terminals good choices for installation in places without utility power.
- Adaptive control of the transmission pattern enables the sensor I/F terminal to use various communication lines.
- Block data-transmission enables the central server to gather sensor data efficiently by reducing the frequency of transmission.
- Terminals have a built-in memory enabling the central server to retrieve sensor data as occasion demands.
- The ability to handle up to four sensors expands the application range.

Application scenarios
- Visualization of electricity consumption in homes, shops, offices, and factories.
- Remote monitoring of electricity generated in photovoltaic power generation systems.
- Environmental monitoring with various weather sensors.
- Safety and security systems with sensors for the prevention of crimes and disasters.
- Platforms for “smart houses”, “smart communities”.

\(^*1\) WAUN: Wide Area Ubiquitous Network. The demonstration test was part of the “Demonstration of the Reduction of Impact on the Environment by Wide Area Sensor Network” project performed under the auspices of the Ministry of Internal Affairs and Communications of Japan from July 6, 2010 to March 31, 2011.

\(^*2\) CT: Clamp-type alternating current sensor.