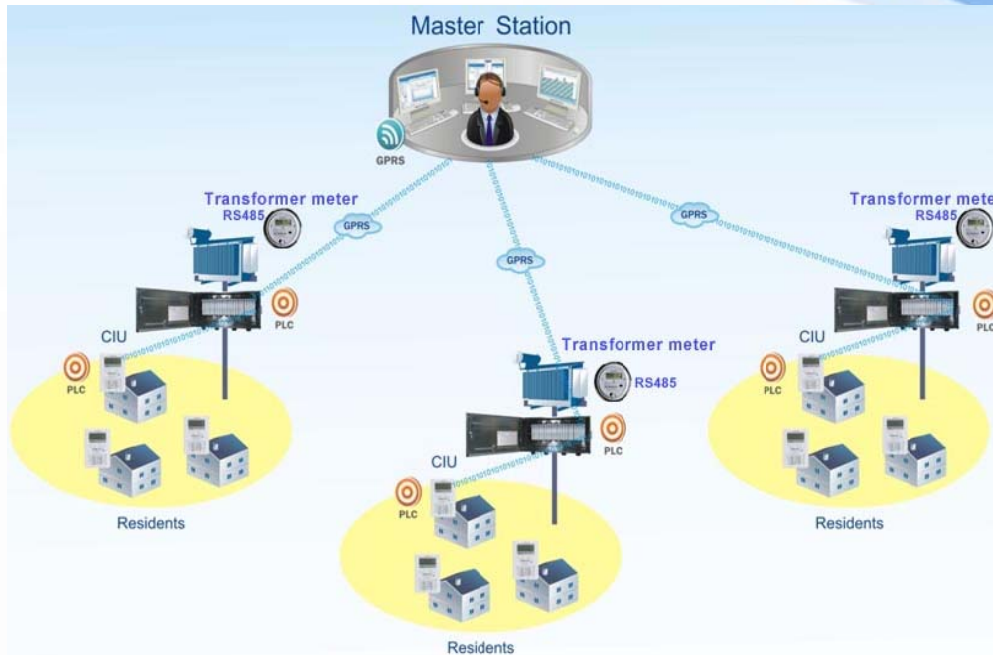# Ultimate solution

---Smart Cluster Metering System

System Structure:

Communication gateway:

- Data collector to master station: GPRS
- Data collector to transformer meter: RS485
- Data collector to meter: RS485
- Data collector to CIU: PLC
- Data collector to HHU: Zigbee

Main functions

- Remote meter reading
- Remote connection/reconnection
- Power loss analysis
- Google map for location view
- Prepayment vending
- On line recharge
- Abnormal event report

Main features

- Postpaid/prepaid optional
- Easy installation and maintenance
- Demand side control
- Anti tamper design

Main Components

Master station, communication network (GPRS/RS485/RF/Ethernet), meter box, data collector, transformer meter, Plug-in meter, CIU and HHU

Application field

Residential area which requires firm anti-tamper system, meter installed in cluster

HXP200 Plug Meter

Overview:

HXP200 plug meter is a typical meter designed for residential anti-tampering project; it benefits advanced technology and applies for both Prepayment and AMI functions. It is direct type and capable of measuring active energy and critical instantaneous values. With elegant look and plug-in design, HXP200 is considered as one of the most reliable and cost-effective products ever developed.

Main functions:

+ *Comprehensive Measurement*

  Measurement of active energy, instantaneous values of active power, voltage, current, frequency and power factor.

+ *Prepayment Functions*

  Remote/local charge are available, secure data transfer via 20-digit,emergency/friendly credit is configurable

+ *Constant Traceability of Events*

  Low/over voltage, relay failure/off, reverse energy/overload/power off traceable

+ *Internal Relay*
+ *Single/multiple tariff as per request*
+ *RS485 to data collector*
+ *High accuracy RTC*
+ *Daily/monthly frozen data available*

Main features

+ *Anti- Fraud Concept*
+ *Easy Installation*
+ *Postpaid/prepaid optional*

Technical Datasheet

Standards	IEC62053-21, IEC62052-11 IEC62055-41
Rated voltage	120V /240V
Frequency	60Hz
Current	10(80)A
Start current	$\leqq 0.4\%Ib$
Accuracy	Active: Cl.1
Constant	1000 imp/kWh
Protection	IP51
Material	Polycarbonate
Dimensions	223mm*101mm*35mm

CIU

Overview:

CIU (Customer Interface Unit) is the customer terminal in smart metering system and installed in user's house. It has LCD display, keyboard input, visual/audible low credit alarm and PLC communication. As a user unit, user can recharge the meter and check data via imputing short code. With user friendly design, CIU is widely applied in prepayment and smart metering solutions.

Main Functions

- **Easy recharge**

  Easy and secure data transfer via 20-digit token;

- **6+2 digit LCD Display**
- **Low credit alarm**

  Visible and audible low credit alarm;

- **Communication Interface**

  PLC to data collector;

- **Easy data query**

  Data query via inputting short code.

Main features:

- **Battery replaceable;**
- **Anti tamper design**

Technical Index

Rated voltage	120V/240V	
Temperature	−25℃～+55℃	
Display	LCD	
Humidity	85% RH	
Protection	IP51	
Weight	0.6kg	
Case material	Polycarbonate	
Dimensions	158mm*110mm*55mm	

HXEC-100 Data collector

Overview:

HXEC-100 Data Collector is installed in meter box, is the communication medium among meters, CIU and HHU. With multi-channel communication, it plays crucial rule in the whole communication network. Data collector can transfer data and auto-report abnormal events to master station, offering remote meter reading and real time monitor for the Utility.

Main Functions

- Centralized meter reading;
- Meter/meter box abnormal event auto-report;
- Data Storage;
  HHU records(HHU ID, data, time),Meter No, black list of HHU
- Multi-communication Interface;
  GPRS to master station;
  PLC with CIU
  RS485 with meter/transformer meter
  RF with HHU
- Load control available

Main functions:

- Easy installation by plug in
- 32bits high performance CPU, high capacity and high accuracy RTC
- Advanced auto routing and network technology to ensure stability and reliability
- Down link meter can reach to 32pcs;

Technical Index:

Power voltage	230V	
Frequency	60Hz	
Protocol	DL/T 645-2007, DLT/645-1997	
RTC Accuracy	≤0.5s/day	
Protection Class	IP51	
Temperature	-25℃ to +80℃	
Work Humidity	10% -85%RH	
Case material	Polycarbonate	
Dimensions	224mm*101mm*37mm	

HHU

Overview:

HHU is a portable device used for utility administration. It is based on Windows CE. and used for mobile data collection. It complies with open standard, ensuring ease of integration with your existing or desired infrastructure. Flexibility of expansion can be guaranteed.

Main Functions

Meter reading;
Relay control;
Data collection by bar code scan;
Zigbee communication to collector
Local optical/USB connection

Main features

Flexible integration with robust expansion
Portable size, easy to carry
User/password for secure access
User-friendly interface;
IP54 protection;

Technical Index

Display		Touch Screen	
Memory		256M/1G Flash ROM 64M/128 SDRAM	
Data backup		SD card/Flash	
OS		Microsoft Windows CE	
Dimension		202mm*78mm*33mm	
Weight		300g	