

nansen

José Pedro Araujo, 960 - Cinco - Contagem/MG - Brasil
+55335143355 - nansen@nansen.com.br - www.nansen.com.br



AUX Group IS one of the 500 largest business conglomerates in China. In 2017, the group's revenue surpassed US\$ 10 billion. AUX operates in more than 100 countries and invests US\$ 16 million a year in innovation. The group has been engaged in five major fields: electric power distribution systems, residential electronics, medical services, real estate investments and financial services.



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NOW NANSEN IS
 

International standards: KEMAS, STSs, SABSS, SGSS e DLMS



To optimize Power Grid Value

Ningbo Sanxing Smart Electric Co., Ltd, subsidiary of AUX group (China's Top 500 Enterprises), established in 1986, is the leading power technology enterprise in the world. The main business activity of company based on research and development electric industry of intelligentization, digitization and sustainable. As one of the China's largest suppliers of power distribution & consumption equipment and overall solution, Sanxing Smart Electric is standing on a leading position of the smart distribution grid and smart measurement field.

Sanxing Medical & Electric has lots of proprietary intellectual property rights and the company continuously stick to the technology innovation as the origin of the enterprise development. With more than 500 professional R&D engineers, the company makes great efforts on supplying high quality and reliable products. The R&D

investment of the company is more than US\$15 million per year.

After years' cultivation, Sanxing Smart Electric has already established power strategic cooperation with more than 50 countries and become the core of the global smart grid construction. Sanxing Smart Electric satisfies the global electric customers' demand more quickly and efficiently through supplying the stable and reliable power distribution and consumption equipments and overall solution. By setting up more overseas manufactures and R&D centers, the company is carrying out localization marketing and technical support services. In the future, Sanxing Smart Electric will actively take part in the global smart grid construction with forward-looking ideas, innovative technology; deep understanding of customer demand, promoting the sustainable development of the power industry.

COMPLETE NETWORK

AMI solution for utility to conquer the following challenges:

- Lack data support for line loss analysis of whole power grid.
- No effective anti-tampering way and solution for overdue payment.
- No power market regulation effective tools.
- Some customers make obstacle to meter readers.
- Difficult to improve the service quality and reliability to customers.

SanPlat AMI guarantees:

- Access to the meter even in closed or limited access areas;
- Improved quality of service and reliability for end customers;
- Protection for revenue.

<p>IMPROVE VALUE</p> <ul style="list-style-type: none"> • Reduce Technical & Non-Technical Line Loss • Anti-tampering & Anti-manipulation • Dynamic Pricing & Power Market Regulation 	<p>REDUCE COST</p> <ul style="list-style-type: none"> • Reduce Labor Cost • Reduce Management Cost 	<p>ENERGY SAVING</p> <ul style="list-style-type: none"> • Improve Energy Consumption Efficiency • Reduce Line Losses
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ONLINE MONITORING

SanPlat AMI solution adopts state of the art metrology, communication technology, concurrent process technology, encryption algorithm with popular openness standard, and accompanied by experienced anti-tamper technology and load control strategy. Implement two way data collection and process, dynamic pricing, load control, anti-tampering, and energy management functions. The solution can bring the benefits to utility as follows:

- Supply data support for line loss analysis of whole power grid.
- Supply effective anti-tampering way and solution for overdue payment.
- Supply power market regulation effective tools.
- Improve the service quality and reliability to customers.

Main Functions

- Self-register and phase identification function.
- Scheduled & on-demand meter reading.
- Remote connection/disconnection/group control.
- amper detection, grid & meter event collection.
- Demand limiting.
- Remote firmware upgrade.
- Remote tariff programming.
- Multiple data items reading.
- Power quality collection.
- Outage detection function.
- Auxiliary meter reading through HHU.



Key features

- **Standardization:** support DLMS COSEM, ANSI, etc. standard protocol.
- **Openness:** support Multi-meter providers and system interoperability interface such as multi-speak & IEC61968 standard;
- **Security:** STA/SSL/HTTPS and 3 layer authority Management.
- **Friendliness:** support Multi-Communication carriers such as PLC (G3, PRIME, SFSK, etc.), RF Mesh, RS485, MBus, 3G/GPRS/SMS/CSD, etc.
- **Cross Platform:** support Multi-operating systems such as windows, Linux, Unix, etc. and Multi-relational databases such as ORACLE, SQL Server, MySQL.
- **Powerful:** concurrent Mass data Management ability.



KEY TECHNOLOGIES

Networking for various of environments

The communication quality plays a crucial role for the normal operation of the AMI system.

Many times, we have to face the bad communication environment. Sanxing independently developed the communication model products, modularization, easily installation and proceeded configuration combination regarding different environment, thus obtained the most cost-effective communication solution.



Concurrent Mass Data Process

The popularization and accessing of smart meters increased exponentially, and sets high demands to the system of handling huge amounts of data and concurrent processing ability. Sanplat AMI system surpassing the traditional save and database technology, adopted load balancing technology and distributed application design, realized the function enhanced of business process, and coped with challenges effectively.

<p>CUSTOM LINE LOSS EDIT</p> <ul style="list-style-type: none"> • On-demand choose to read the meters. • Analysis of the frequency can be configured. 	<p>SMART LINE LOSS ANALYSIS</p> <ul style="list-style-type: none"> • Abnormal line loss alarm. • Real-time line loss contrast. • Historical data query. • Abnormal meter alarm. 	<p>FRIENDLY INTERACTION EXPERIENCE</p> <ul style="list-style-type: none"> • On-demand display setting. • Associative lookup. • Data to be displayed graphically.
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SERVICE-ORIENTED ARCHITECTURE

The core component of SanPlat AMI system is based on the business oriented platform design, multimetric functional modules together, supports multiple communication mode and protocol, seamless connection with smart meters, ensure the system could be operated efficiently and stably.

Support Multi communication methods, improve system scalability:

- Remote communication: GSM/GPRS/3G/SMS/CSD
- Local communication: RF Mesh/ ZigBee/ USB/ RS485
- Support long-connection & wake up connection

Open communication protocol & interoperability interface

- IEC 62056-21 • DLMS/COSEM • CIS and CIM (IEC61968 and IEC61970)

Unified master station for all the different utility applications, decrease the investment cost and maintenance cost.

MDC - Meter Data Collector



System Module Components

- System Management • Parameter Management • Archives Administration • Remoting Management • Analysis Management • Report Management

OTHER COMPONENTS

<p>Data Concentrator</p> <ul style="list-style-type: none"> • Multi-communication channels and channel encrypted • Multi-protocol library (DLMS) • Self Register and auto route networking • Local & remote firmware upgrade • WEB server for data reading and parameter setting • Support outage communication • Enhance anti-tampering • Maximum 2039 meter connection 	<p>Smart Meter</p> <ul style="list-style-type: none"> • Tariff configurable (Single/Step or/and TOU). • Load limit configurable. • Tampering events record. • Remote communication with plug and play by GPRS /3G / PLC / RF / SMS/CSD. • Open standard such DLMS COSEM. • Support data encryption. 	<p>CT/PT Meter</p> <ul style="list-style-type: none"> • Local and remote firmware upgrade • Open standardized protocols for metering and SCADA interface • Data encryption schemes to ensure the data security in communication • Flexible Input and Output interface • Multi-tariffs configurable • Download data via smart optical interface when power off
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