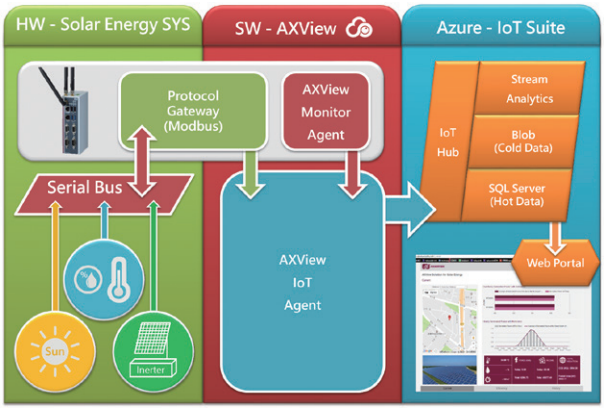
AXView Solar

IIoT Remote Management Solution

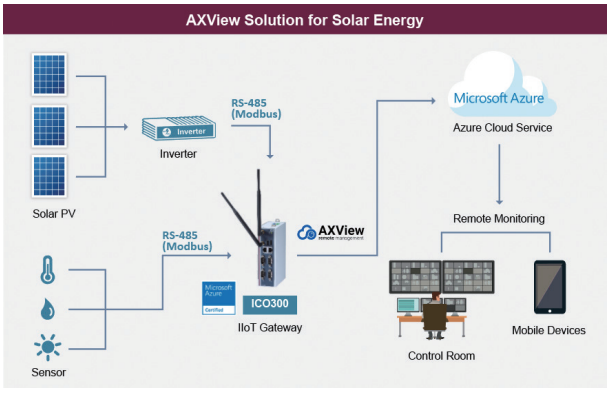


Introduction

AXView is an intelligent remote monitoring/management software suite built in intelligent gateway to collect data from sensors and send it over to Microsoft Azure for IoT cloud services. AXView collects data related to solar power, including the volume of the solar power, sunlight intensity, and ambient temperature and humidity, as well as data about inverter efficiency and abnormal events. Next, the data collected will be sent over to Microsoft Azure database for further analysis, as well as be pushed to business intelligent report for managing individual solar energy station. Accordingly, operators can conduct daily maintenance by referring to historical data for system integration.

The design of AXView solution is aiming to provide power generation systems based on solar energy with an integral service based on special-purposed software and hardware integration which consists of three parts - the monitoring end, the cloud, and the front & back end of management platform - jointly delivering the following main services:

- Collection data of power generation
- Collection of environmental parameters
- Detection of abnormal incidents
- Analysis of efficiency of power generation
- Data storage at the cloud
- Control of revenue data
- Display of figures and data
- Analysis of historical data



AXView is designed to facilitate power equipment to reach its maximum performance without interruption while lowering the cost of overall maintenance. The main highlight about AXView lies in that it can automatically collect information about power generation, and store and backup data on the cloud; therefore allow a power equipment to enjoy uninterruptible performance at zero maintenance cost. Just to name a few benefits that AXView can offer:

- All figures and data can be viewed on the web at anytime from anywhere to help grasp on-site situations, thus reducing the cost for labor patrol and inspection
- All analyses are illustrated in the format of diagrams to help predictive maintenance, thus reducing the incidence of abnormal events
- All year-round (24/7) monitoring and notification of abnormal events are carried out to help alarms get across in a timely fashion, thus shortening time-to-response.

Features

- Easy to communicate with other devices via Modbus protocol
- Automatic gathering and logging system status about gateway, inverter and sensor
- Seamless accessibility to Microsoft Azure cloud
- Assured to safeguard security operation of the system and automatically back up data when disconnected
- Effective remote control through remote I/O commands
- Visual dashboard of user friendliness
- Free for customers to use AXView solution within entry level

Core System

Communications	Protocol: Modbus TCP Communications Interfaces: RS-485, RJ-45, Wi-Fi, 3/4G
Monitoring	A. Manageability Devices (e.g. watchdog timer, sensor) available to monitor CPU, power, temperature, etc. Hardware event-logging Notification for the start and the end of power generation Remote I/O commands Diagnostic analytics report B. Frequency of data collection – every 10 minutes C. Gateway and inverter alarming via email
Cloud Integration	Microsoft Azure suite Microsoft SQL Server/MySQL support Business intelligence reporting
Security	Watchdog timer to ensure normal operation Operating authentication by User ID Intact for the latest 500 records during disconnection
Remote Control	API available at the remote side to send commands API available at the client side to receive commands Remote I/O commands are to be customized case by case
Analytics	Compare incident data and history data Efficient calculation Diagrammatic presentation of analytical information
Entry-level Structure	One ICO300 Five Inverters One Pyranometer, one Temperature Sensor (i.e. thermometer), and one Humidity Sensor (i.e. hygrometer) Use of AXView may be subject to a fee on a case-by-case basis for system structures beyond the entry level
System Requirements	OS: Windows® 7 or above CPU: Intel® Atom™ processor E3815 or above Storage: 16GB or above Memory: 4GB or above
Platforms	ICO-series with Isolated COM Port (other platforms are available upon request)
Inverters	Delta RPI H3 and RPI H5 Other inverters may be supported upon request